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AUTHOR Williams, Russell
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ABSTRACT

The effectiveness of a differential staffing plan and a behavioral oriented teaching approach for upgrading of rural Utah elementary schools was examined. SPURS staffing model (an Elementary Secondary Education Act Title III project) consisted of an Instructional Design Team (composed of curriculum and behavioral specialists on a multischool basis) and an Instructional Technician in each classroom. An experimental and a control fifth grade classroom were selected from each of three different school districts. Ninety experimental and 83 control subjects were selected randomly by using a standard mathematical table. These students were administered the: California Achievement Test, Level 3 Form A; Lorge-Thorndike Intelligence Test; Student Activities Questionnaire; and IDEA/ETS Attitude Questionnaire. Data were treated statistically using analyses of variance and covariance. The experimental model was successful in providing an overall (multivariate) significantly better attitude toward learning and a significantly higher achievement level among students participating in SPURS. Specific areas of significance of attitude toward learning were: class content, career development, multiple talent, enjoyment of school, and individual instruction. Specific areas of achievement significance were: capitalization, punctuation, and comprehension. (NQ)

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STAFFING PLAN FOR UPGRADING OF RURAL SCHOOLS

(SPURS)

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DIVISION OF RESEARCH AND DEVELOPMENT
Western States Small Schools Project, Utah
Bill Cowan, Director

Western States Small Schools Project
Herb Steffens, Director
Carson City, Nevada

Researcher
Russell Williams

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The work presented or reported herein was performed pursuant to a grant from the Utah State Board of Education, Division of Research and Development. The grant was made under provisions of Title III of the Elementary and Secondary Education Act of 1965 to the Park City Schools Superintendent through the cooperation of the Park City School District Board of Education.

ABSTRACT

The purpose of this study was to determine the effectiveness of a differential staffing plan and a behavioral oriented teaching approach for upgrading of rural Utah elementary schools.

The experimental model was successful in providing an overall (multivariate) significantly better attitude toward learning and a significantly higher level of achievement among students employed in this experiment. The specific areas of significance of attitude toward learning for the students engaged in the experimental model were: class content, career development, multiple talent, enjoyment of school and individual instruction.

The specific areas of significance of achievement for students engaged in the experimental model were: capitalization, punctuation and comprehension.

The model of differentiated staffing tested in this study is unique in that a non-certified teacher (IT) was responsible for the day to day monitoring of the students. The IT was a person who had been trained in the use of a behavioral approach to teaching.

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Chapter I

INTRODUCTION

Research findings of behavioral scientists, including those findings from learning theorists and educational researchers, which have implications for improved instructions and attitude toward learning do not automatically become available for classroom use upon discovery; therefore, those individuals engaged in teaching will need to be trained in adapting their behavior to these findings before they can be employed in the classroom. This experiment was conducted to measure the effectiveness of a method of implementing behavioral scientific findings into the classroom setting for rural Utah.

Statement of Purpose

The purpose of this study was to determine the effectiveness of a differential staffing plan and a behavioral oriented teaching approach for upgrading of rural Utah elementary schools.

Delimitations

This study was limited to those students that were enrolled in the fourth and fifth grades in schools in rural Utah.

The behavioral approach to learning was limited to a reinforcement approach similar to that advocated by Hunter (1971).

This study was limited to those methods of differentiated staffing that required the use of behavioral sciences findings, as a basis for the staff role differentiation.

Definition of Terms

Differentiated Staffing:

Differentiated staffing is a personnel design and system of organization that makes effective and efficient use of human and non-human resources through a better definition of job tasks and functions, using differentiation of role, status, competency and reward.

Behavioral approach:

The behavioral approach used in this study indicated a behavior reinforcement approach, such as that developed by Hunter (1967).

Rural Schools:

Those Utah schools located in a town with a total population of less than 5,000 persons.

Review of Literature:

The Changing Role of the Teacher

The changing role of the teacher in the classroom has been a topic of continuing interest to those interested in finding alternate methods to facilitate learning.

The changing role of the teacher occupies a position of central importance in trying to understand man and how he relates to his learning environment.

The teacher is moving away from the position of being exclusively or predominantly a source of data and a disperser of information. He

tends to stand increasingly as a mobilizer of materials for learning (Kapfer, 1970).

What has been said of recent research applies with equal force to the findings of the behavioral sciences, which have implications for learning and instruction. New information about learners and learning does not automatically become available for classroom use upon discovery, whether it be knowledge the student is to learn or knowledge that will facilitate his learning. For example, before a fifth grade student in an elementary school can have access to a curriculum in "new math", the teacher must be trained in the concepts of new math. Also, there are students in that same fifth grade for whom learning could be facilitated by the application of the psychological concept of reinforcement; but before this can happen, the teacher will need to be trained in adapting personal behavior to this principle. However, with limited inservice education programs currently available to that teacher, and with little or not supervision, the likelihood of the fifth grade students of an elementary school ever benefiting from either or these kinds of new knowledge is very remote.

Glaser (1966) saw this lag in the translation of scientific knowledge into practice and observed that, at this time, an entity to carry out the future of instructional design and development hardly exists. He envisioned a person (or an organization) known as an "instructional designer", who would perform such a task. Glaser saw such a person operating in the following manner:

First, he would analyze the subject matter domain under consideration, reading, mathmatics or other. He would think of the domain in terms of the performance competencies, which comprise it. He would analyze representative instances of subject matter competence according to the stimulus characteristics of the content involved and the properties of the responses the student makes to the content. He would further analyze the structural characteristics of the domain, perhaps, according to its conceptual hierarchies and operating rules.

Second, this instructional designer would turn his attention to the characteristics of the students that are to be taught. He would determine the extent to which the students have already acquired some of the concepts to be learned, the extent to which they have certain content prerequisites, the extent to which their antecedent learnings might facilitate or interfere with the new learning, and the extent to which the students have certain aptitude-like prerequisites consisting of necessary sensory discriminations and motor skills.

These first two steps provide information to the educational designer about the target performance to be obtained and the existing pre-instructional behavior of the learner. The designer must then proceed to get from one state to the other. This sets up the third task. This task consists of helping students go from the pre-instructional behavior state to a state of subject-matter competence.

Third, this step requires the construction of teaching procedures and materials to be employed in the educational process. As a part of this process, he must take account of the motivational effects and the ability of humans to generalize and extrapolate; this is

accomplished by providing conditions, which will result in the maintenance and extension of the competence being taught.

Finally, the educational designer must make provision for assessing and evaluating the nature of the competence and kind of knowledge achieved by the learner in relation to some performance criteria that have been established.

There is growing literature calling for new organizational approaches to staffing elementary and secondary schools and new differentiated roles for school staffs. For too many years, uniformity of structure has characterized the American school. The self-contained elementary school teacher and the departmentalized school teacher have served all functions for too many children, now those patterns are breaking down (Allen, 1969; Joyce, 1967; Kapfer, 1970).

Trump (1959) called for a more highly trained professional staff serving greater numbers of students by utilizing many kinds of "instructional assistance". He proposed a ratio of instructional assistants to professional teachers of twenty to one.

Tradition holds that school and college performance is essentially a synthesis of comprehensive individual performance. A teacher with a given number of students in a classroom - with that teacher almost solely responsible for what his students experience as formal education - is the symbol of educative endeavor. Effectiveness of the total performance of the organization, thus, depends, upon the loosely coordinated virtuosity of largely autonomous artisans.

Under this tradition, staffing is chiefly a problem of producing and securing the services of more and more virtuosos with the

wishful assumption that the virtuosity of each will be superb. But what has been forecast, as the approaching contact for formal education, implies a total and well-coordinated demand for virtuosity on the part of schools and colleges far exceeding that previously contemplated, even for the paragons described - though rarely found - as requisite carriers of the educative mission.

Trump (1959) believed that the capacity of the present conception of how to instruct was inadequate to meet the demand. Further, he contended, it was an outmoded means for capitalizing upon the educative technology already available and certainly could not exploit the technology to become available. Therefore, it was proposed that schools and colleges should place increasing reliance upon the systems of instruction, and should seek to staff for the systems approach. This would mean preparation and procurement to provide workers representing a wide range of levels in professional development possessing highly variant competencies and performing specialized functions. To be certain all analysts forecast the necessity for increasing sharply the total number of workers in the educational enterprise. But the cutting edge of the challenge, as he saw it, resided in a new concept of who these workers should be.

Apparently, education in the future will be in the hands of a wide array of workers - not just the "teacher" to whom all have become accustomed. Some of these may require almost no preparation measurable in collegiate semester hours. Certainly, a wide variety of specializations will be both appropriate and necessary. A few efforts to

meet this new look of the staff for education have been made in educational circles. But the emergency of statewide plans to define the approaching new look in terms of workers foreseen, and to develop the requisite training programs as needed is not yet a striking phenomenon, although one would think it should be (Kaskew, 1970).

Newer objectives for education place great emphasis upon processes as opposed to content. Learning how to learn and motivation for lifetime learning are two of the most important objectives of education.

Sophisticated decision-making is required today. A truly vigorous personal, intellectual and social education can be created only if the teacher and the students, as they work together, have many options available to them - options which enable students to engage in a large variety of instructional activities and which assist teachers to perform a corresponding diversity of instructional roles. Teachers need a rich laboratory of books, audiovisual media, and other technological resources in order to create at least three basic types of learning situations which serve to distinct, but overlapping, needs of the student:

(1) To develop on his own terms, follow his special interests, enlarge his particular talents, and nurture his uniqueness, the student needs the teacher to function as his "academic counselor", his personal guide, facilitator, alter ego, and friend.

(2) To develop basic knowledge and skills, such as learning to use language and number symbols, and to acquire a general knowledge of the world and as introduction to the academic discipline, the student requires individualized instruction. His program should be geared as much as possible to his rate of achievement, his learning style, and his strengths and weaknesses. His teacher serves him as a diagnostician and prescriber.

(3) To become an effective member of an inquiring group that tracks down information, checks out hypotheses, debates social issues, "practices" the scholarly discipline and tries out old ideas and creates new ones, requires that a student have teachers who lead an inquiring group and help it become a self-propelling miniature democracy, whose members improve their interpresonal development in the course of their academic inquiry.

The means for creating such an education are coming within grasp. Advancing technology and new understanding are about to make it possible to prescribe for each child the learning materials and teaching strategies which closely match his achievements, ability and learning style (Joyce, 1967).

If the new instructional pattern of education is to be given a chance to succeed, it will require the support of a new set of personnel conditions.

These elements are sure to develop unless they are stifled by inflexibility:

1. Different roles within the teaching staff, which vary in:

   A. Breadth of area of responsibility
   B. Type of duty to be performed
   C. Type and amount of technical competency
   D. Training needed for duty

2. A set of definite task specifications, which will regulate both the training and the performance of the task with specified minimum levels of competence.

3. Differential salaries directly related to the differential roles, listed above and not related to the grade level, distance from teaching toward non-teaching roles, and only slightly related to the length of service. (Cushman, 1967).

The successful informal methods being used in the British primary schools provide great encouragement to the classroom procedures envisioned within this staffing pattern. Formal classroom teaching - the instructor standing up front talking to the group, or even the first-grade room divided up into reading groups, to whom the teacher listens to separately, as she tries desperately to keep order - has disappeared from many infant and a number of junior schools. It has disappeared, because it is inflexible, because it imposes a single pattern of learning on a whole group of children - thus, forcing the schools to "track", or to group classes by ability - because it ignores the extent to which children teach each other, and because in many work-a-day schools other methods are working better (Featherstone, 1967).

Differentiated Staffing

English (1970) saw the differentiated staff as education's emerging technostructure, a new blend of the technical and managerial subsystem within school districts by which instructional pro-

ultimately may be solved; he viewed differentiation as a method of decision-making, as did John Kenneth Galbraith. Galbraith coins the word 'Technostructure' to describe the current organizational practices of multiple-group decision-making which is the guiding intelligence of the enterprise. This extremely complex set of human interrelationships, not management, is the essence of the enterprise. Diffused decision making within a definitive hierarchy is a vertical extension of teacher influence.

Differentiated staffing requires more specialized teaching roles in the teaching and learning process; there is a need for the specialization and the creation of new staff (Lynch, 1970).

There are basically two models that are used to describe differentiated staffing - horizontal and vertical. The J. Lloyd Trump (horizontal) differentiation assumes that the task, competencies, and responsibilities of teachers are different but equal; the Dwight Allen (vertical) differentiation assumes that teachers are different and unequal. (Keefe, 1971)

The vertical staffing patterns can create salary differentials that can result in personal problems. The horizontal differentiated model is based on extra pay for extra work and provides for a wide range of positions from para-professional to professor (Bhaerman, 1971).

Several definitions of para-professional have been volunteered and examples of such roles, as field experience supervisors; liason personnel for student-faculty action- education programs in communities; in house consultants for on campus seminars, classes, and courses,

communications facilitators and translators; and community-to-college representatives have been given (Island, 1970).

Staffing models which are based on student learning needs, needs to upgrade the quality of instruction, provide more individualized learning programs and encourage good teachers to remain in the classroom. They also stress the importance of full participation of all staff involved in such a model (Sharpes, 1969) (Stocker, 1970).

Some of the general themes concerning the implementation of educational change are:

1. The gross unclarity in conceptualization and definition of what the schools are attempting to implement through change projects.

2. The heavy reliance on structural change (writing job descriptions, changing titles, altering organizational units) in the belief that appropriate behavior changes will automatically follow.

3. The fallacious assumption that a statement of general, abstract program values and objectives will easily be translated into new and appropriate behavior patterns at work.

4. The apparent assumption that schools need little additional resources (financial or personnel) to cope with the massive organizational disruptions during the period of transition from one educational program form to a new one (Charters, 1972).

Results of studies on differential staffing models indicated more responsibility for aides or para-professionals and were also instructionally and clerically supportive and structional-teaching in nature. Teachers were more restrictive in their expectations than were the aides. Teachers saw aides as being more restrictive than the aides actually were, and aides saw teachers as being less restrictive than the teachers were. The aides assumed more responsibility for instructional-teaching in the open-spaced schools and more responsibility for instructional-support and clerical tasks in traditional schools (Lansing, 1973).

In general findings indicate that two inferences may be drawn about the innovative process. First, some structual changes are almost inescapable in an innovating school and its work system, and the consequences of such changes are not always congruent with the innovations intended. Secondly, major implementation projects normally have "disruptive effects" that divert teacher attention away from those duties they regard as their foremost responsibility (Charters, 1973).

A number of differentiated staffing models were reviewed as to their approach in involving para-professionals as learning or behavioral specialists in the classroom. A selected list of differentiated staffing schools can be found in Appendix G. In general there were no staffing programs that employed para-professionals as learning specialists on a day to day basis.

Summary

1. Differentiated staffing requires more specialized teaching roles in the teaching and learning process; there is a need for the specialization and the creation of new staff (Lynch, 1970).

2. Differentiated staffing assumes staff is different and unequal (Keefe, 1971).

3. Staffing model based on student needs provide more individualized learning (Sharpes, 1969), (Stocker, 1970).

4. Para-professionals, when trained in a behavioral approach to learning, can provide a favorable learning environment. (Hunter,1971).

Behavioral Approaches

Modern psychology is dominated by what are known as "Theories of learning". In the past thirty years psychologists have acquired a

considerable amount of quantitative information concerning various human processes, particularly in the field of learning. The word learning is used in an extremely broad manner and includes many aspects of behavior, which is acquired by experience.

Behavior therapy is a term used to describe many new psychotherapeutic methods, which have been developed in recent years. Although the actual procedures vary, they all have a common theoretical basis (Wolpe, 1958; Jones, 1960; Mitzner, 1961).

The position adopted by behavior therapists is that behavior is acquired or learned; then, it must follow that such behavior will be subject to established laws of learning (Hunter, 1967). It is very apparent, therefore, that these established laws of learning should be understood by anyone trying to establish new behavior patterns in an individual within a learning center (Grossburg, 1964).

In a further review of the literature dealing specifically on behavior therapy with children, articles are classified in terms of therapists' goals in treatment, which in all of the following areas the studies reviewed convincingly demonstrate the efficiency of behaviorist approaches.

1. Deceleration of maladaptive behavior.
2. Acceleration of prosocial behavior
3. Combined promotion of adapting behaviors and control of problematic behavior.

Although the behaviorist approaches have already met with a great deal of success, further use is expected to strengthen and make more specific the understanding of how to structure early experiences so as to assist each child to a solid start in life (White, 1971; Gelfand, 1968).

Behaviorist approaches have demonstrated that a sensitive blend of encouragement, discipline and praise helps young children develop inner strength for growing (Neisser, 1969).

Token reinforcement programs, where tokens were used as positive reinforcement, indicated significantly higher rates of positive behavior (Swoope, 1974).

Results of studies on workshops in which teachers were trained to observe classroom behavior and to continue to independently train themselves after the conclusion of the workshop indicated that teachers could be trained in observation of classroom behavior, but they met with very little success in continuing to train themselves after the conclusion of the workshop (Kotcher, 1972).

Further, in studying workshops designed to teach behavior modification procedures to elementary school teachers, it was found that behaviors chosen by teachers, such as, hitting, out of seat, following instructions and completing assignments can be successfully changed by the teacher following the third training session, and that following nine training sessions in behavioral psychology, operant techniques could be applied with no further need of consultation with the instructor (Brown, 1973).

Summary

1. Behavior is acquired or learned (Wolpe, 1958).

2. Behavior therapists have been most successful in facilitating the acquisition of new behavior (Grossbury, 1964).

3. Behaviorist approaches have demonstrated the encouragement, discipline and praise facilitate development (Neisser, 1969).

4. The use of positive reinforcement produces higher rates of positive behavior (Swoope, 1974; Hunter, 1971).

5. Teachers and para-professionals can be effectively trained in the use of reinforcement theory (Brown, 1972; Hunter, 1971).

Hypotheses:

This study was based on the hypotheses that:

1. There will be no significant difference between the overall (Multivariate) academic achievement level of experimental group and a control group of fifth grade students.

2. There will be no significant difference between the attitude toward learning of an experimental group and a control group of fifth grade students.

Chapter 2

METHOD

Population

The subjects employed in the experimental group for this study were selected randomly from those rural Utah elementary schools that submitted a formal request to participate in the experiment to the Utah State Division of Research and Innovation.

The subjects employed in the experimental and control groups for this study were selected randomly from rural Utah elementary schools. Subjects were selected on a classroom basis and not on an individual basis.

There were a total of three experimental classrooms and three control classrooms selected from three different school districts. One experimental classroom and one control classroom was selected from each school district.

The subjects in both the experimental and control groups were selected randomly by the use of a standard mathematical table (Hodgmen, 1967). Ninety experimental subjects and eighty-three control subjects were tested from the population described earlier.

SPURS Staffing Model

The staffing plans for upgrading rural schools (SPURS) was not a traditional pattern modified by adding personnel to an existing staff. Instead, the positions and roles were determined by a definition of the

0026

instructional act derived from an analysis of human learning. The model was based upon the assumption that three general functions must be skillfully performed in order for the best student learning to occur. These three functions, greatly simplified, are:

1. Determination of curriculum content and the identification or development of the necessary materials to deliver this content.

2. Determination, through diagnosis, of appropriate learning tasks for each student.

3. Management of the learning environment; social, emotional and physical.

Another assumption of the project was that it was unrealistic to expect every teacher to perform all of these tasks effectively. Therefore the model provided for a team effort, with each member of the team especially trained to perform his assigned function. Thus, each child was instructed by a coordinated team rather than by a signle teacher.

The model provided for an Instructional Design Team (IDT) who were curriculum and behavioral specialists on a multischool basis, and an Instructional Technician (IT) in each classroom. It also provided for a trained Instructional Coordinator (IC) (principal) in each school and an Advisory Board for each cluster composed of district superintendents and classroom teacher representatives. A visual relationship between these roles is shown in Figure 1. Role definitions and role relationships are expanded in Appendix B.

Special training programs were designed to prepare each of the three IT's to assume their role in the SPURS model. The training program conducted by IDT's extensively utilized on-the-job training. The specific

(typo; actually p. 18; no material missing)

objectives of the initial training of the IT's during the first four weeks of training are presented below.

The specific nature of the IT training is unique to the SPURS model and is therefore presented here. The curriculum specialist held a master's degree in elementary education with a major in elementary curriculum. The behavioral specialist held a master's degree in school psycology with a major in behaviorlism. The IC or principal held a master's degree in elementary school administration.

OBJECTIVES FOR I.T. TRAINING

"Engage learners in prescribed activities".

1. Conducting the activities prescribed by the IDT.

2. Maintaining appropriate classroom and outdoor behavior.

A. Classroom Management

Example - <u>On the Yard</u>

a. Given one or more classes on the yard, each IT will supervise the group so that the children can enjoy the activity, and avoid dangers.

b. Each IT will help to settle disputes by providing opportunities for each one involved to seek alternative, more productive behaviors.

c. When the bell rings (signal given), each IT will direct those needing it to appropriate place.

d. Given a class in physical education, each IT will organize a game that may be already known, so there is maximum participation and enjoyment.

e. Given a new game to be played, each IT will introduce it in a way that groups will play it correctly and skillfully.

e. Given the needs for a specific physical education skill, each IT will organize so that the skill is learned by individuals who need it.

2B. Transition Activities

a. Each IT will select an appropriate and effective way to take out and bring in a class (to yard).

b. Given groups to move from one task to another within the classroom, the IT will gain the attention of the group.

c. Given the need of groups to move, the IT will give concise and simple directions so each may be successful.

2C. In The Classroom

a. To insure more effective learning, each IT will organize the classroom so children:

(a). Can sit where each can work
(b). Can anticipate needs
(c). Can have materials ready to work
(d). Listen to each other
(e). Become more independent and responsible for themselves and their work.

b. Given a story to read to the group, each IT will read using techniques that promote for the child's attention, enjoyment and learning with regard to:

(a). Seating
(b). Teacher's position
(c). Appropriate content
(d). Eye Contact
(e). Pacing
(f). Expression
(g). Motivate to listen

c. Given a topic or problem relevant to the group, the IT will conduct discussion so there are:

(a). Appropriate responses
(b). Maximum involvement
(c). Some resolvement

d. Given directions to give to the group, the IT will give:

(a). Concisely and as simply as possible
(b). No more than three things in a sequence to do
(c). Will check with students as to what each will be doing and what will be done when finished

e. Each IT will manage the groups, as they are working to promote maximum learning by:

(a). Monitoring
(b). Noting any children that are unproductive and need assistance

f. Given an appropriate film strip, the IT will arrange for its:

(a). Showing
(b). Motivate the effective learning
(c). Show film

He will maintain productive behavior throughout the showing by using reinforcement appropriately.

(a). He will ask questions that alert children to high points.
(b). He will solicit answers and activities that give evidence of learning.

The IT will communicate with the children in a number of different ways:

(a). Write directions on the board
(b). Give the students oral directions (symbol or body language).
(c). By written papers and ditto sheets, etc.

g. On the basis of progress of the students, the IT may make a decision, as authorized by the Instructional Design Team, to:

(a). Switch to another activity
(b). Start over
(c). Slow down
(d). Increase pacing
(e). Abandon the entire subject or lesson

h. Given information on the levels of each child in reading, each IT will:

(a). Monitor the reading so that each child is occupied with a task he can do successfully.

i. Given records and dances, each IT will organize a class for successful dancing or singing to records with learners by:

(a). Providing for listening and practicing
(b). Being aware of skill needs

(c). Reinforcing and evaluating with learners
(d). Motivating the students and giving instructions

j. Given directions for games in the room, each IT will organize for playing the game effectively by:

(a). Anticipating problems and developing solutions.
(b). Reinforcing and motivating
(c). Evaluating with the students

k. Given a reading activity in which such behaviors are appropriate, each IT will hear individuals read or groups of children read and will:

(a). Note mispronunciations or miscalled words
(b). Help the meaning or understanding
(c). Ask appropriate questions

l. Given work that the children need to do alone, such as ditto sheet answers, making something, each IT will motivate for the task (as needed):

(a). He will give purpose
(b). He will organize for best results
(c). He will give knowledge of results.

3. Maintaining necessary physical environment

a. Each IT will promote order and beauty by:

Maintain the necessary physical environment.

b. Each IT will promote the assumption of responsibility by the students for his environment.

4. Motivating the students to engage in the prescribed behaviors and reinforce appropriate instances.

a. Each IT will apply his knowledge to the solution of simulated situation articulating his reasons.

b. Each IT will apply his knowledge to classroom situations articulating his reasons for choice of action.

c. Each IT will identify and/or generate the behavioral objectives relevant to the above.

d. Each IT will employ his knowledge of the science of giving directions by:

(a). Planning - thinking through the directions in advance to determine how many different things must the student remember to do?

(b). Which of these has he done before and which are are new to him?
(c). Can he do the new things, if he tries?
(d). How many directions must be given at one time? (No more than three).
(e). When is the best time to give these directions? (Just before they are to be carried out).
(f). What is the best sequence for the directions that must be given at the same time?
(g). Should the directions be written or verbal?

5. Giving directions (to an individual or a group)

A. The IT will gain the individual's or group's attention by:

(a). Establishing a signal for getting the attention of the learner. For example, saying the word 'class'.
(b). Waiting to have everyone's attention before giving directions.

If the IT will do this, he will not waste a lot of time repeating instructions.

B. The IT will give directions in a way that reflects conscientious planning:

(a). Know what the objectives are to begin with. Such as (what am I going to do today; what do I expect of the learner today). This should be done before the IT starts to give directions.

If the IT does not know or does not expect the learner to know He should not be surprised when the student stops following the directions and start to do his own thing.

C. The IT should check understanding. He should not assume that everyone has understood what has been said. He should:

(a). Ask questions
(b). If necessary, give some directions in another way.

D. The IT should model behavior by:

(a). Making sure to show the learner how to accomplish a task before asking him to try it.

E. The IT should be able to translate into action his directions, after having explained to the learner and modeled for the learner how to accomplish a task. Then the IT should ask the learner to try the task, redirecting if it is necessary.

F. The IT should enable the use practice in mass and intermediate.

6. Initial diagnosis

A. Each IT will employ his knowledge of diagnosis by:

(a). Determining the level of current abilities.
(b). Establishing behavioral objectives for the purpose of future diagnosis and designing lessons for the instructor.
(c). Noting the behavior of most concerned.
(d). Recording behavior and behavioral objectives.

7. On-going diagnosis

A. The IT will evaluate the achievement of the instructor, the learner, then teach and design the next lesson on basis of evaluation.

B. Each IT will demonstrate his ability to use the principles of reinforcement and motivation by the effective use of punishment to:

(a). to surpress behavior
(b). to extinguish behavior

Punishment only tells a learner what not to do and should be used seldom, if at all, in a school setting. Use of reinforcement, however, is necessary for learning:

(a). schedules of reinforcement
(b). the effect on learning

The completion of each objective by each IT was determined by the overt behavioral expression of the IT's ability to perform each task. A log of the training is given in Appendix C. In addition to the initial training, bi-monthly in-service training sessions were conducted by the instructional design team for the IT's with bi-weekly follow-up, onsight training.

The instructional model was derived from the way people learn in life in which learning is a by-product of accomplishing some want-satisfying task and is a result of direct perception and experience of consequences (Kapfer, 1970. Given this change in focus, the student learned as he

needed to in order to make a decision or in order to produce some product that he wanted, thus, reducing both the motivational and transfer problems that have plagued the schools for so long. In order to activate such learning, the traditional verbal academic content was put back into natural form in which it exists in the environment so that it could be known through the senses.

INSTRUMENTS:

The California Achievement Test (CAT), Level 3, Form A with sub tests: use and structure, spelling, Punctuation I, Punctuation II, computation, concepts, problems, fractions, vocabulary, comprehension and total this test also has good validity cluster around .60 or higher and good reliability with all levels ranging between .83 or .98. It is a well constructed test battery recommended for general achievement at all grade levels (Tiegs, 1970)

The Lorge-Thorndike Intelligence Test (LTIT) with sub tests: verbal battery and non-verbal battery is a group test with a range from kindergarten through twelfth grade. It has a validity coefficient at .60 or higher and a good reliability, odd-even, ranging from .86 to .94. It is one of the best group intelligence tests (Lorge, 1954).

Student Activities Questionnaire (SAQ) is a multiple choice instrument containing 62 items, which can be completed in approximately 20 to 30 minutes by 5th and 6th grade students. The instrument was designed to provide educators with different kinds of information on the effectiveness of the educational process as seen and evaluated by

the consumers of the educational system -- the students themselves. The measures available from SAQ include: enjoyment of school, independent development, classroom participation, democratic classroom control, individualization of instruction, reinforcement of self-concept and career development.

Independent Development. This measure is concerned with activities independent of, or outside, the classroom to assess whether students had shown some early indications of self directed development.

Enjoyment of School. This score measures the extent to which students enjoy class activities and schoolwork.

Reinforcement of Self-Concept. This score measures the extent to which the teachers provide positive reinforcement, either personnally or through structured class situations, how the student feels about such feedback and his overall feelings about his school activities.

Individualization of Instruction. This scale measures the extent to which students perceived their teachers as sensitive to their own individual needs, progress and goals.

Career Development. This score measures the extent to which teachers provide activities that involve skills not specifically limited to the school setting, but related to a broader spectrum of general skills applicable beyond the classroom.

Classroom Participation. This score measures the extent of student participation that occurs in classroom activities. More specifically, the score was comprised of items that measure the frequency

of classroom discussions, the number of students that typically participate in the classroom.

Democratic Classroom Control. This score measures the estent that teachers allowed student input into the classroom decision-making, the planning of individual activities, and the enforcement of rules.

The SAQ has adequate validity reported in the low .50 range and adequate reliability reported mostly in the low .70 range (SAQ, 1973).

The IDEA/ETS Attitude Questionnaire (IDEA) is designed to find out what activities students do in school and some of their feelings and ideas about these activities. Each question consists of a sentence with a word or words missing. The student is given a choice of five words with which to complete the sentence. The IDEA has four sub tests. The sub tests: Attitude Toward Self, Attitude Toward Self Concept, Peer Relationship, have adequate validity reported in the .50 range and adequate test-retest reliability reported in the low .70 range (Institute, 1971).

Test Rationale The CAT - Level 3 - Form A, 1970 was used to assess all subjects in this study for the following reasons:

1. Its ability to measure the achievement level in school related academic areas for students attending the fourth, fifth, and sixth grades.

2. Its objective measure of achievement level and its ease of administering and scoring.

The LTIT was used to assess all subjects in the study for the following reasons:

1. Its ability to measure intellectual functioning and its ease of administering and scoring.

The SAQ was used to assess all subjects (See Appendix D) in this study for the following reasons:

1. Its ability to measure attitude toward school of fourth, fifth and sixth grade students.

2. Its ease of administering and scoring.

3. It provides sub categories.

4. The difficulty in measuring attitude of subjects at this age.

The IDEA was used to assess all subjects in this study (See Appendix F) for the following reasons:

1. Its ability to measure attitude toward school of fourth, fifth and sixth grade students.

2. Its ease of administering and scoring.

3. It provides sub categories.

4. The difficulty in measuring attitudes of subjects at this age.

PROCEDURE

Approval for each subject to participate in the SPURS experimental group was obtained from each parent, during a personal interview by the experimentor.

Permission for the control group to participate was obtained during a personal interview by the examiner from the superintendents of the different school districts. Subjects were selected for this study at the start of the fourth grade in 1971.

Following the random selection of the students, who were considered for this study, each subject was administered the CAT, Level 3, Form A; the LTIT; the SAQ; and the IDEA at the end of the fifth grade, 1973. Only those subjects who were involved in the experiment for two years were considered for this study.

All subjects were tested in the fifth grade classroom of the school that they had attended during the school year in order to control for testing error during testing.

All tests were administered from 9:00 a.m. to 11:00 a.m. or 1:30 p.m. to 2:30 p.m. on Tuesday, Wednesday and Thursday from April 24 through May 1, 1974. All of the testing was done by persons who were employed by the school districts to do testing and had had several yeara (5 or more) of experience administering standardized tests. All testers were coached and given instructions by the experimentor as to the proper procedures of the administration of the standardized tests used in this experiment. The standard procedure for administering the tests, as outlined in the test manuals, was adhered to. Rapport was established with the subjects and a testing facility comparable to the standardized recommendation was obtained before each test was administered.

TREATMENT OF DATA

Although multivariate analysis of variance procedures were used to evaluate the data, the conceptually equivalent, but simpler, corresponding univariable statistical models for 2 x 3 x 2 analysis of variance and covariance are presented below. For the analysis of variance the model is as follows:

$$Y_{ijkl} = u + T_j + D_k + S_l + TD_{jk} + TS_{jl} + DS_{kl} + TDS_{jkl} + E_{ijkl}$$

Y = Dependent Variable(s) of interest

U = Grand Mean

T = Treatment effects - experimental versus control groups

D - District Effects

S = Sex Effects

E = Error

The dependent variables in this study were the total scores and the sub test scores of the SAW, the IDEA, and the CAT.

The independent variable in this study was the staffing plan for upgrading rural schools (SPURS).

With respect to the covariance analysis, the model is different only in that the regression between the covariables and dependent variables are included as follows:

$$Y_{ijkl} = Y_{ijkl} - B_m(X_{ijklm} - \overline{X}_m) = U + T_j + D_k + S_l + TD_{jk} + TS_{jl} + DS_{kl} + E_{ijkl}$$

X_m = Covariable, observation

m = Designates particular covariable variable

B_m = Regression weight for the indicated covariate

In the case of the covariance analysis, eight covariate variables were used. These were obtained from the sub scale scores of the LTIT. Since the level of achievement, as measured by CAT, is presumable related to the intellectual capacity of an individual and since the effects of the treatment (SPURS) could be expected to differ with respect to intelligence level, analysis covariance, which adjusts criterion variables (in this case CAT variables) for differing levels of the covariate (in this case intellectual capacity) was used to control for the possible effects of variability in intellectual capacity among the various sub groups of the experimental design. The analysis of covariance is to equate all groups in terms of covariate. In this experiment, the LTIT was administered to all Ss in the study and the resulting scores were used as covariates in the analysis of CAT performance. LTIT was 5 verbal and 3 nonverbal measures of intelligence.

Chapter 3

RESULTS

The dependent variables were derived from three measuring instruments described earlier. These were the IDEA, SAW, and the CAT. Each of these was composed of a number of separate sub scales, which were included in the multivariate analysis for that instrument.

In reporting the results the following procedures were followed. Since the multivariate test utilized can be regarded as a series of univariate tests, which optionally weights each variable, only the outcomes for multivariate tests which were significant at the .05 level or beyond were considered. The same criterion was employed in reporting the outcomes of the univariate tests, when the corresponding multivariate test was significant. The overall tested significance was obtained using Wilk's Lambda criterion (likelihood ratio sheet) and the corresponding fractions were obtained through Rao's approximating (Rao, 1952). A computer program developed by Clyde (1969) was employed to perform the various computations required.

Attitude

The data from the IDEA questionnaire revealed significant main effects for difference between districts and between sexes indicating that there was a significant difference between districts and between sexes, $F(8,296) = 4.304$, $P > .001$, and $F(4,148) = 9.183$, $P > .001$. (See Tables 1 and 2.)

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TABLE 1

MULTIVARIATE TEST OF SIGNIFICANCE FOR

DISTRICT (D) EFFECTS - IDEA VARIABLES

F	df-HYP	df-ERR	P	R
4.304	8	296	.001	.380

TABLE 2

MULTIVARIATE TEST OF SIGNIFICACE FOR

SEX (S) EFFECTS - IDEA VARIABLES

F	df-HYP	df-ERR	P	R
9.183	4	148	.001	.446

The experimental factor produced no significant effects on the data from the IDEA. In the case of both the district and sex factors, the multivariate F was significant at the .001 level. The univariate tests for the effect of the various school districts (See Table 3) suggested that attitude toward learning and peer relationship variable were primarily responsible for the overall effects observed. These were significantly different between districts at the $F(2,151) = 11.06$, $P>.001$ and $F(2,151) = 4.181$, $P>.02$ levels respectively. The respective district means are presented in Table 4. Table 5 presents the results of the univariate tests for the male vs. female contrasts. In this case only one of the four dependent variables (Attitude Toward Learning), $F(1,151) = 21.493$, $P>.001$) discriminated between the sexes with females being significantly greater than males. The respective means are presented in Table 6.

A more complex pattern was revealed by the analysis of the SAQ data. Tables 7-9 presents the results of the overall multivariate test

TABLE 3

UNIVARIATE TESTS OF SIGNIFICANCE FOR

DISTRICT (D) EFFECTS - IDEA VARIABLES

DEPENDENT VARIABLES	df	MS	F	P
Attitude Toward Self	2	249.453	1.864	.159
*Attitude Toward Learning	2	3105.018	11.062	.001
Self Concept	2	412.964	2.149	.120
*Peer Relationships	2	782.167	4.181	.020

TABLE 4

MEANS FOR DISTRICT (D) EFFECTS

ON - IDEA VARIABLES

DEPENDENT VARIABLES	1	2	3
Attitude Toward Self	62.106	60.772	58.050
*Attitude Toward Learning	71.530	62.930	56.150
Self Concept	58.197	53.632	53.850
*Peer Relationships	63.894	56.754	60.875

TABLE 5

UNIVARIATE TEST OF SIGNIFICANCE FOR

SEX (S) EFFECTS - IDEA VARIABLES

DEPENDENT VARIABLE	df	MS	F	P
Attitude Toward Self	1	251.465	1.880	.172
*Attitude Toward Learning	1	6033.125	21.493	.001
Self Concept	1	218.811	1.139	.288
*Peer Relationship	1	58.547	< 1.000	—

* Significant differences on these variables...

TABLE 6

MEANS FOR SEX (S) EFFECTS

ON IDEA VARIABLES

SEX

DEPENDENT VARIABLES	MALE	FEMALE
Attitude Toward Self	59.284	61.988
*Attitude Toward Learning	58.765	70.658
Self Concept	54.432	56.622
Peer Relationships	61.469	59.854

*Significant differences on this variable..

TABLE 7

MULTIVARIATE TEST OF SIGNIFICANCE FOR

TREATMENT (T) EFFECTS - SAQ VARIABLES

F	DFHYP	DFERR	P	R
4.034	8	145	< .001	.427

TABLE 8

MULTIVARIATE TEST OF SIGNIFICANCE FOR

DISTRICT (D) EFFECTS - SAQ VARIABLES

F	DFHYP	DFERR	P	R
1.894	16	290	< .021	.362

TABLE 9

MULTIVARIATE TEST OF SIGNIFICANCE FOR

SEX (S) EFFECTS - SAQ VARIABLES

F	DFHYP	DFERR	P	R
5.775	8	145	.001	.492

of significance, which suggested significant main effect for all three factors; treatment, $F(8,145) = 4.034$, $P < .001$; district, $F(16,290) = 1,894$, $P < .02$; and sex, $F(8,145) = 5,775$, $P > .001$. In addition, there was a significant interaction between treatment and district (See Table 10).

The corresponding univariate tests and means are presented in Tables 11-14.

With regard to the effects of the treatment variable, there were significant differences on three of the dependent variables on the SAQ; these included class content, $F(1,152) = 13,591$, P .001; career development, $F(1,152) = 10,994$, P .001; and multiple talent, $F(1,152) = 13,591$, $P < .001$; all in favor of the treatment variable (See Tables 11 and 12).

Differences between districts appeared on two of the SAQ variables, career development, $F(2,152) = 4,094$, $P < .02$; and individualization of instructions, $F(2,152) = 6,185$, $P < .003$; with Districts 2 and 3 being significantly greater than District 1. The univariate tests and means are presented in Tables 13 and 14. The sex factor made a difference on only one of the SAQ variables. Enjoyment of school, $F(1,152) = 29,875$, $P < .001$ was significantly greater for females than for males (See Tables 15 and 16).

As indicated above, there were several variables on which significant interaction effects for Treatment and District were observed. The univariates tests and their means are presented in Tables 17 and 18 These variables on the SAQ included Enjoyment of School, $F(2,152) = 4,086$ $P < .019$; Class Content, $F(2,152) = 8.551$, $P < .001$; Career Development, $F(2,152) = 19,956$, $P < .001$; Individualization of Instruction, $F(2,152) = 3.668$, $P < .028$; and Multiple Talents, $F(2,152) = 28,476$, $P < .001$. The presence of interactions indicates that the effects of one factor

TABLE 10

MULTIVARIATE TEST OF SIGNIFICANCE FOR

TREATMENT X DISTRICT (TXD) EFFECTS - SAQ VARIABLES

F	DFHYP	DFERR	P	R
5.613	16	290	.001	.604

TABLE 11

UNIVARIATE TEST OF SIGNIFICANCE FOR

TREATMENT (T) EFFECTS - SAQ VARIABLES

DEPENDENT VARIABLE	df	MS	F	P
Class Content	1	111.126	13.395	.001
Career Development	1	354.141	10.994	.001
Multiple Talent	1	208.682	13.591	.001

TABLE 12

MEANS FOR TREATMENT (T) EFFECTS ON

SAQ VARIABLES

DEPENDENT VARIABLE	TREATMENT EXPERIMENTAL (SPURS)	CONTROL
Class Content	17.732	16.085
Career Development	49.780	46.841
Multiple Talent	29.646	27.390

TABLE 13

UNIVARIATE TESTS OF SIGNIFICANCE FOR

DISTRICT (D) EFFECTS - SAQ VARIABLES

DEPENDENT VARIABLE	df	MS	F	P
Career Development	2	131.883	4.094	< .019
*Individual Instruction	2	33.329	6.185	< .003

*Significance differences on this variable...

TABLE 14

MEANS FOR DISTRICT (D) EFFECTS ON

SAQ VARIABLES

DEPENDENT VARIABLE	DISTRICT 1	2	3
Career Development	46.646	49.034	49.927
Individual of Instruction	12.538	13.759	13.976

TABLE 15

UNIVARIATE TEST OF SIGNIFICANCE FOR

SEX (S) EFFECTS - SAQ EFFECTS

DEPENDENT VARIABLE	df	MS	F	P
Enjoyment of School	1	182.952	29.875	< .001

TABLE 16

MEANS FOR SEX (S) EFFECTS

ON SAQ VARIABLES

	SEX	
DEPENDENT VARIABLE	MALE	FEMALE
Enjoyment of School	8.790	10.904

TABLE 17

UNIVARIATE TESTS OF SIGNIFICANCE FOR

TREATMENT X DISTRICT (TXD) EFFECTS

SAQ VARIABLES

DEPENDENT VARIABLE	df	MS	F	P
Enjoyment of School	2	25.025	4.086	< .019
Class Content	2	70.937	8.551	< .001
Career Development	2	642.817	19.956	< .001
Individual of Instr.	2	19.767	3.668	< .028
[illegible]le Talents	2	437.234	28.476	< .001

TABLE 18

MEANS FOR TREATMENT X DISTRICT (TXD)

EFFECTS ON SAQ VARIABLES

DISTRICT	ENJ. SCHOOL		CLASS CONTENT		CAREER DEVELOP.	
	Tr.	Con.	Tr.	Con.	Tr.	Con.
1	9.600	9.114	17.233	15.743	47.200	46.171
2	9.154	10.875	16.500	16.875	48.077	49.812
3	10.308	10.400	19.538	15.200	54.461	42.067

	INDIVIDUAL INSTRUCTION		MULTI-TALENT	
	Tr.	Con.	Tr.	Con.
1	12.533	12.543	28.533	26.914
2	13.346	14.094	27.231	29.719
3	14.654	12.800	33.346	23.533

are not uniform for all levels of a second factor. In the present case the effects of treatment were not uniform across all districts for those variables indicated above. In terms of the interaction itself, there is a general pattern for each of the variables above. An inspection of Table 18 will show that the treatment mean is significantly greater than or equal to the control mean for all five SAQ variables in districts one and three and that in district two the control group mean is the greater in the case of each of the SAQ variables.

This suggests questions concerning the equivalency of the treatment and control groups, the characteristics of students and the implementation of the treatment procedures in the second district.

ACHIEVEMENT

The analysis for the data from the IDEA and SAQ questionnaire has been treated essentially the same. The analysis of data from the CAT, which follows, differs in one important respect. Since the level of achievement, as measured by the CAT, is presumably related to the intellectual capacity of an individual and since the effects of the treatment(SPURS) could be expected to differ with respect to intelligence level, analysis covariance, which adjusts criterion variables (in this case intellectual capacity) was used to control for the possible effects of variability in intellectual capacity among the various groups of the experimental design. The effect of analysis of covariance is to equate all groups in terms of covariate.

In this experiment of the LTIT was administered to all Ss in the study and the resulting scores were used as covariates in the analysis of CAT performance. There are eight (8) sub scale scores on the LTIT, five of which are verbal measures of intelligence and three

of which are non-verbal measures of intelligence. All eight of these sub scales score were used as covariates in the analysis which follows.

The CAT results revealed significant main effects in the case of the treatment and sex factors and significant interaction effects once again for treatment and district. Tables 19-21 present the multi-variate tests for the treatment, sex and treatment district effects. The corresponding univariate analysis and means are presented in Tables 22-27.

Table 22 shows that there were three CAT variables for which treatment effects occured. These were Capitalization, $F(1,130) = 5,562$, $P < .02$; Punctuation II, $F(1,130) = 31,216$, $P < .001$; and Comprehension, $F(1,130) = 10,742$, $P < .001$. Table 23, which contains the means for the treatment and control groups for these variables, shows that in all cases the treatment or experimental group performed better than did the control group.

The univariate tests for the sex factor presented in Table 24 were significant for the following CAT variables: Use and Structure, $F(1,130) = 16,890$, $P < .001$; Punctuation I, $F(1,130) = 15,355$, $P < .001$; and Punctuation II, $F(1,130) = 8,000$, $P < .005$. In all cases females scored higher than did males. (See Table 25).

The treatment effects for the CAT variables were not uniform across all districts included in this study. Table 26 presents the univariate tests, which revealed that there were significant interaction effects between treatment and district for Use and Structure, Punctuation II, Vocabularly and Comprehension. The corresponding means are in Table 27. Examination of those means reveals, that for the Use and Structure measurement, the experimental groups performed at a higher level for districts one and three and at a lower level for district two. With respect

TABLE 19

MULTIVARIATE TEST OF SIGNIFICANCE FOR

TREATMENT (T) EFFECTS - CAT VARIABLES

F	df-HYP	df-ERR	P	R
5.239	11	120	< .001	.570

TABLE 20

MULTIVARIATE TEST OF SIGNIFICANCE FOR

SEX (S) EFFECTS - CAT VARIABLES

F	df-HYP	df-ERR	P	R
3.020	11	120	< .001	.466

TABLE 21

MULTIVARIATE TEST OF SIGNIFICANCE FOR

TREATMENT X DISTRICT (TXD) EFFECTS

CAT VARIABLES

F	df-HYP	df-ERR	P	R
1.969	22	240	< .007	.407

TABLE 22

UNIVARIATE TESTS OF SIGNIFICANCE FOR

TREATMENT (T) EFFECTS - CAT VARIABLE

DEPENDENT VARIABLE	df	MS	F	P
Capitalization	1	144.724	5.562	< .020
Punctuation II	1	84.864	31.216	< .001
Comprehension	1	167.652	10.742	< .001

TABLE 23

MEANS FOR TREATMENT (T) EFFECTS

ON CAT VARIABLES

DEPENDENT VARIABLE	TREATMENT	
	EXPERIMENTAL (SPURS)	CONTROL
Capitalization	24.797	22.509
Punctuation II	4.203	2.450
Comprehension	24.831	22.368

TABLE 24

UNIVARIATE TESTS OF SIGNIFICANCE FOR

SEX(S) EFFECTS - CAT VARIABLES

DEPENDENT VARIABLES	df	MS	F	P
Use and Structure	1	273.590	16.890	< .001
Punctuation I	1	323.437	15.355	< .001
PunctuationII	1	21.749	8.000	< .005

TABLE 25

MEANS FOR SEX (S) EFFECTS

ON CAT VARIABLES

	SEX	
DEPENDENT VARIABLES	MALE	FEMALE
Use and Structure	14.471	17.450
Punctuation I	16.678	19.825
Punctuation II	2.996	3.640

TABLE 26

UNIVARIATE TESTS OF SIGNIFICANCE FOR

TREATMENT X DISTRICT (TXD) EFFECTS

CAT VARIABLES

DEPENDENT VARIABLE	df	MS	F	R
Use and Structure	2	72.355	4.467	< .013
Punctuation II	2	8.024	2.951	< .056*
Vocabulary	2	201.002	5.137	< .007
Comprehension	2	67.887	4.350	< .015

*This variable included even though it did not quite meet the specified alpha level.

TABLE 27

MEANS FOR TREATMENT X DISTRICT (TXD)

EFFECTS ON CAT VARIABLES

	USE AND STRUCTURE		PUNCT. II		VOCABULARY		COMPREHENSION	
DISTRICT	Tr.	Con.	Tr.	Con.	Tr.	Con.	Tr.	Con.
1	16.301	13.911	4.207	1.438	27.212	22.364	26.539	20.931
2	13.589	16.594	3.575	2.947	21.579	26.445	23.871	23.362
3	18.863	17.721	4.774	3.685	20.779	24.288	23.649	23.579

to the vocabulary measure, $F(2,130) = 5,137$, $P < .07$, district one had greater scores for the experimental groups. Still another pattern emerges with regard to comprehension, $F(2,130) = 4,350$, $P < .015$. The experimental group had higher scores for district one, but there were virtually no differences between experimental and control groups for districts two and three.

Questions similar to those raised with regard to the treatment by district interactions for the SAQ data may be raised with these results.

This study was based on the hypothesis that:

1. There would be no significant difference between the overall (multivariate) academic achievement level of experimental group (SPURS) and a control group of fifth grade students, as measured by the CAT, level 3, Form A.

2. There would be no significant difference between the attitude toward learning of an experimental group (SPURS) and a control group of fifth grade students as measured by the SAQ and the IDEA.

The results of this study, as presented above, enable the rejection of the Null hypothesis.

Chapter 4

DISCUSSION

The SPURS project was designed to test an alternate method of staffing, a staffing method that would provide a fast and effective means to incorporate the findings of educational research and behavioral science into the classroom. The project was based on the premise that before such findings could become useful in the classroom, a method of training personnel must be devised.

This study was conductedto determine if a significant difference existed in attitude toward learning and achievement level of an experimental group (SPURS) and a control group of students employing the traditional model of education. The null hypothesis stated that no significant differences existed in the selected factors of the above mentioned variables. Analysis of variance were performed on the data with regard to the main effects of (a) treatment (experimental and control); (b) district; (c) sex; and (d) the interaction of treatment, district and sex.

Some of the reason for employing a new model of education are (a) failure of the traditional model of education to meet the needs of the students; (b) long transient search for a more effective model; (c) impressionistic planning; (d) behavioral data as the essential base for education; (e) conditions essential for behavioral change; (f) creating those conditions mentioned above in the school; (g) learning is a consequence, not a goal of activity.

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The subjects employed in this study were selected at random from rural Utah schools. Each student was tested to determine achievement level and attitude toward learning. The data obtained from this study was treated statistically using analysis of variance and analysis of covariance.

One element that makes this staffing plan unique is the extensive specialized training that was provided. The training focused on:

1. Developing the concept of a child-centered learning center, rather than the teacher occupying center stage.

2. Knowledge and application of reinforcement therapy. Training began in July with four weeks at UCLA Elementary School. There were also ongoing bi-monthly inservice training sessions conducted by the IDT, with bi-weekly follow-up on-sight training throughout the school year. All training was under the direction of someone that had a workable knowledge of behavioral science.

The results of the project give strong support to a method of staffing that would allow for scientific findings to be employed rapidly into the classroom with regard to the multivariate tests of significance in all cases, achievement level and attitude toward learning, the experimental group (SPURS) was equal to or significantly greater at the .05 level than the control group. With regard to the univariate test of significance the SPURS model was significantly greater at the .05 level for class content, career development, multiple talent, enjoyment of school and individual instruction. In no case was the control group significantly greater than the experimental group on the univariate attitude toward learning tests.

It is interesting to note that where a more concrete personal interaction with phenomena was used, such as with the SPURS model of instruction, that class content, career development and multiple-talent, three sub tests on the SAQ that deal with career education, were all significant in favor of the experimental group, again giving support to a behavioral approach to learning.

The CAT, an instrument used to measure academic success, showed that the experimental group received significantly higher scores than the control group with capitalization, punctuation II and comprehension, showing the highest levels of significance. The specific area of significance of achievement for students in the control group was: Vocabulary. The data presented in the results section in Table 22 is conclusive in its support of the SPURS model. It should also be remembered that the IT's, those having primary responsibility for daily maintenance of the classroom, averaged less than two years of college and less than one year of educational training.

As stated in the results, when comparing districts within the experimental group, districts one and three all have treatment means greater than or equal to the control mean, while in district two, the control group mean are greater in the case of each variable. The differences in district two are not significant. However, this suggests a number of possibilities or questions of concern. such as the equality of the control groups, the accuracy of the testing procedure or the implementation of the treatment method in district two. While any conclusion as to the cause of what has occured are highly speculative, it is interesting to note that in district two the IT employed was trained in the traditional method of teaching and would continually return to that method of instruction, when not supervised.

When dealing with a student's attitude toward learning, the experimental group (SPURS) means were equal to or significantly higher than the control group. Levels of significance that are greater than the .05 level of significance, included: Enjoyment of School; Class Content; Career Development; Individualization and Multiple Talent. This is further demonstrated in the SPURS students answers to the following specific questions asked by the experimentor: (1) 'Do you always like the other children in your class?' 100% answered yes; (2) 'Do you always have to do what the other children want to do?' 100% answered yes; (3) 'Are the other children in your class friendly to you?' 89% answered yes; (4) 'Do you wish you were in a different class at school?' 99.6% answered no; (5) 'Is school a happy place for you to be?' 88% answered yes; (6) 'Does your teacher yell at you too much?' 100% answered no; (7) 'Would you like to stay home instead of going to school?' 88% answered no.

At the beginning of the school year, twenty-one (21) SPURS students were reported by previous teachers and/or principals, as having behavioral problems that were severe enough to interfere with learning. At the end of the project only three (3) were having identifiable behavioral problems, while the others were able to control their own behavior and function normally in the classroom.

When parents were first introduced to the SPURS project, attitudes ranged on a dichotomy from low level anxiety to great concern. The results of the Parent Evaluation Questionnaire (Appendix D) given at the end of the project showed 83% of the response given as positive, 10% as uncertain and 7% as disagreeing for the SPURS parents, as compared to 71% positive, 18% uncertain and 11% disagreeing for the control group.

During Parent/Teacher conferences, 97% of the parents attended and 91% gave unsolicited support to the model. Some of the strongest supporters of the project came from parents, whose children has in the past disliked school and would attend only when forced to do so. Comments such as, "I used to have to take him to school and he would run away from school. Now I just have to wake him up and he goes to school on his own", were typical of such parents.

In addition to the academic and attitude measures, SPURS was also interested in the physical fitness and physical education of the child. To measure the success of each program, the President's Physical Fitness criteria were used. All of the students enrolled in both the experimental group and the control group were administered the President's Physical Fitness test. Ninety-three percent of the experimental group received presidential awards for physical fitness, while only 4% of the students in the control group qualified for the Presidential Physical Fitness awards.

SUMMARY

The SPURS model has proven to be an effective model or method of education. The SPURS model was successful in providing a method of training staff that allowed for the implementation of the findings of the behavioral sciences, including findings from learning theorists and educational researchers (Hunter 1971).

The SPURS model was successful in providing an overall (multivariate) significantly better attitude toward learning and a significantly higher level of achievement among students employed in this experiment. The specific areas of significance of attitude toward learning for the students engaged in the SPURS model were: class content,

career development, multiple talent, enjoyment of school and individual instruction.

The specific areas of significance of achievement for students engaged in the SPURS model were: capitalization, punctuation and comprehension. The specific area of significance of achievement for students engaged in the control group was: vocabulary.

Chapter 5

CONCLUSIONS AND RECOMMENDATIONS

Findings of the behavioral science, including those findings from learning theorists and educational researchers, which implications for instructions and attitude toward learning do not automatically become available for classroom use upon discovery; therefore, those individuals engaged in teaching will need to be trained in adapting their behavior to these principles before these findings are employed in the classroom.

The purpose of this study was to determine the effectiveness of a differential staffing plan and a behavioral oriented teaching approach for upgrading rural Utah schools.

Statistics used were analysis of variance and covariance, difference at or less than the .05 level of significance were required for the academic achievement and the attitude toward learning during the experimental period. The academic achievement and the attitude toward learning of the experimental group (SPURS) were greater than that of the control group.

The SPURS project is a useful model of education that provides an effective method of employing the research findings of educational researchers and the experimental results of behavioral sciences into

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the classroom. It provides for training of staff, and it is a cost effective model, which is a major concern when evaluating any new program.

The model of differentiated staffing tested in this study is unique in that a non certified teacher (IT) was responsible for the day to day monitoring of the students. The IT was a person who had been trained in the use of a behavioral approach to teaching.

The results of this study give support to a behavioral approach to teaching and to a staffing plan that facilitates this type of teaching through the inservice training of staff.

It should be remembered that the results of this study are limited to the perimeters of the population from which the subjects were selected. It is, therefore, recommended that additional research be conducted using the behavioral approach to learning, as well as the inservice training methods employed in this study. It is recommended that the approach presented here not only be tested in the classroom and districts of the schools, but also be employed at the preparation of certified teachers at the university level, thus preparing teachers and instructional technicians that are skilled learning and behavioral specialists, as well as curriculum specialists.

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APPENDIX A

STATISTICAL ANALYSIS OF DATA

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APPENDIX A

CALIFORNIA ACHIEVEMENT TEST, LEVEL 3, FORM A

MEANS AND STANDARD DEVIATIONS

FACTOR T	D	S				VARIABLE CAPITALIZATION	USE & STRUCTURE	SPELLING	PUNCT. I	PUNCT. II	COMPUTATION
1	1	0	14	OBS	M	20.643	10.929	20.000	13.786	1.714	31.643
					SD	8.898	4.393	4.403	7.516	1.326	9.162
1	1	1	15	OBS	M	21.800	14.600	21.200	16.467	3.000	33.000
					SD	5.772	4.339	3.342	6.278	1.927	6.141
1	2	0	13	OBS	M	23.538	13.615	22.231	18.308	3.692	33.692
					SD	7.996	6.752	3.811	6.824	2.750	6.447
1	2	1	9	OBS	M	27.333	17.333	21.222	22.889	5.222	36.111
					SD	9.721	4.330	4.295	5.326	2.167	4.781
1	3	0	14	OBS	M	25.500	16.500	21.429	16.500	4.214	33.643
					SD	7.079	5.502	3.610	5.488	1.477	9.660
1	3	1	10	OBS	M	29.100	23.300	23.000	20.200	5.900	37.200
					SD	6.871	5.314	4.163	5.007	2.025	8.638
2	1	0	15	OBS	M	16.867	12.400	19.467	14.133	1.133	31.933
					SD	6.556	4.925	4.518	6.988	1.506	11.634
2	1	1	17	OBS	M	23.588	15.882	21.588	18.471	2.471	33.706
					SD	5.397	5.023	3.241	6.587	2.154	6.826

MEANS AND STANDARD DEVIATIONS CONT'D

FACTOR T	D	S				CAPITALIZATION	USE & STRUCTURE	SPELLING	PUNCT. I	PUNCT. II	COMPUTATION
2	2	0	14	OBS	M	23.786	14.500	20.786	16.857	2.143	32.429
					SD	6.647	5.488	3.401	5.614	2.316	9.061
2	2	1	14	OBS	M	25.500	19.286	23.571	23.214	4.000	36.786
					SD	9.638	6.673	3.005	4.526	3.328	7.934
2	3	0	3	OBS	M	25.000	19.333	21.333	17.667	4.667	35.667
					SD	7.937	8.737	7.572	11.240	4.509	12.055
2	3	1	12	OBS	M	26.083	20.333	21.500	23.917	4.833	35.417
					SD	4.852	4.292	3.966	3.777	1.586	7.914

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T = Treatment

1 = experimental
2 = control

D = District

S = Sex

0 = Male
1 = Female

APPENDIX A

CALIFORNIA ACHIEVEMENT TEST, LEVEL 3, FORM A

MEANS AND STANDARD DEVIATIONS

FACTOR T	D	S				CONCEPT	VARIABLE PROBLEMS	FRACTIONS	VOCABULARY	Y COMPREHENSION
1	1	0	14	OBS	M	14.143	8.643	5.286	20.571	20.071
					SD	4.185	3.003	1.939	9.078	8.435
1	1	1	15	OBS	M	15.533	8.600	6.000	23.533	21.933
					SD	3.833	2.746	1.927	6.610	6.756
1	2	0	13	OBS	M	17.000	11.000	5.538	24.615	26.923
					SD	3.082	2.828	1.391	10.759	6.130
1	2	1	9	OBS	M	17.222	10.000	6.111	25.111	26.222
					SD	3.528	3.317	2.315	6.528	6.180
1	3	0	14	OBS	M	18.071	10.571	6.857	19.000	23.357
					SD	4.122	3.413	2.825	10.183	5.583
1	3	1	10	OBS	M	19.100	11.600	6.800	21.400	24.700
					SD	3.695	2.319	3.425	13.558	6.865
2	1	0	15	OBS	M	18.067	11.267	9.133	21.533	18.933
					SD	12.332	11.061	14.262	9.635	7.704
2	1	1	17	OBS	M	16.647	8.529	5.588	22.294	23.294
					SD	2.370	2.478	1.460	6.182	4.552

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MEANS AND STANDARD DEVIATIONS CONT'D

FACTOR T	D	S			CONCEPT	PROBLEMS	FRACTIONS	VOCABULARY	Y COMPREHENSION
2	2	0	14 OBS	M	16.857	8.571	6.857	26.571	22.357
				SD	4.655	3.458	3.134	9.255	7.762
2	2	1	14 OBS	M	18.286	9.643	8.643	29.929	26.214
				SD	4.340	3.692	4.517	6.592	8.469
2	3	0	3 OBS	M	18.000	10.667	7.333	27.333	27.667
				SD	4.000	4.509	3.215	9.292	9.815
2	3	1	12 OBS	M	17.167	10.000	5.917	28.417	27.250
				SD	3.486	2.796	1.832	5.728	5.610

T = Treatment

1 = experimental
2 = control

D = District

S = Sex
0 = male
1 = female

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APPENDIX A

STUDENT ACTIVITY QUESTIONNAIRE (SAQ)

MEANS AND STANDARD DEVIATIONS

FACTOR T	D	S				VARIABLE ENJOY SCH.	IND. DEVEL.	SELF CONCP.	CLASS PART	CLASS CONT	CAREER DEV	IND.OF INS.
1	1	0	15	OBS	M	8.333	11.133	11.333	14.200	17.267	46.000	12.600
					SD	2.440	3.044	2.920	3.144	2.764	5.745	2.640
1	1	1	15	OBS	M	10.867	11.400	10.600	14.267	17.200	48.400	12.467
					SD	2.386	2.694	2.586	2.282	1.971	5.779	2.100
1	2	0	15	OBS	M	7.400	11.267	11.933	15.067	16.267	47.533	13.400
					SD	2.501	3.693	2.764	2.576	2.939	5.370	2.384
1	2	1	11	OBS	M	11.545	11.636	11.727	13.545	16.818	48.818	13.273
					SD	3.045	2.618	3.165	2.734	1.168	5.828	2.149
1	3	0	16	OBS	M	9.688	11.563	12.313	16.125	18.939	54.063	14.750
					SD	2.676	3.425	3.092	2.500	2.265	6.865	2.049
1	3	1	10	OBS	M	11.300	10.300	11.900	16.100	20.500	55.100	14.500
					SD	1.889	1.889	2.378	1.853	2.550	5.109	2.799
2	1	0	15	OBS	M	7.933	10.200	11.333	13.733	15.733	46.800	11.533
					SD	1.981	2.957	2.380	2.314	2.520	4.678	2.748
2	1	1	20	OBS	M	10.000	11.600	11.100	14.600	15.750	45.700	13.300
					SD	2.492	2.780	2.426	2.703	3.024	6.001	2.105

MEANS AND STANDARD DEVIATIONS CONT'D

FACTOR T	D	S				ENJOY SCH.	IND. DEVEL.	SELF CONCP.	CLASS PART	CLASS CONT	CAREER DEV	IND.OF INS.
2	2	0	17	OBS	M	9.824	10.588	11.706	14.059	15.824	45.412	14.294
					SD	2.628	3.063	2.756	2.487	3.812	5.173	1.896
2	2	1	15	OBS	M	12.067	13.867	11.667	14.600	18.067	52.533	13.867
					SD	2.120	2.386	3.716	2.098	2.987	4.984	2.200
2	3	0	3	OBS	M	11.667	15.000	13.000	15.333	14.333	45.333	14.667
					SD	4.163	3.00	3.000	0.577	3.215	3.055	2.309
2	3	1	12	OBS	M	10.083	10.583	9.750	13.917	15.417	41.250	12.333
					SD	2.466	2.968	2.633	3.088	4.144	6.717	2.605

0078

T = Treatment

1 = experimental
2 = control

D = District

S = Sex

0 = Male
1 = Female

APPENDIX A

IDEA/ETS ATTITUDE QUESTIONNAIRE

MEANS AND STANDARD DEVIATIONS

FACTOR T	D	S			VARIABLE ATT. TO. LEARN.	ATT. SELF	SELF CONCPN.	PEER RELATIONSHIPS
1	1	0	14 OBS	M	62.286	72.929	58.714	60.429
				SD	19.925	29.024	30.823	27.626
1	1	1	15 OBS	M	63.333	68.467	56.533	66.667
				SD	13.275	19.871	11.300	13.124
1	2	0	15 OBS	M	64.600	74.867	59.067	59.067
				SD	9.463	14.121	13.253	10.793
1	2	1	11 OBS	M	60.545	53.364	53.455	58.273
				SD	6.486	11.236	9.353	13.543
1	3	0	16 OBS	M	57.063	60.125	52.438	62.500
				SD	5.721	11.224	7.958	10.714
1	3	1	10 OBS	M	60.800	49.500	55.300	56.400
				SD	7.421	16.575	7.931	8.249
2	1	0	17 OBS	M	62.941	80.000	61.294	64.118
				SD	13.636	22.779	16.803	17.492
2	1	1	14 OBS	M	60.350	65.650	56.450	64.050
				SD	10.101	13.632	9.870	8.666

0079

MEANS AND STANDARD DEVIATIONS CONT'D

FACTOR T	D	S			ATT. TO. LEARN.	ATT. SELF	SELF CONCPN.	PEER RELATIONSHIPS
2	2	0	17 OBS	M	63.824	69.706	52.235	54.000
				SD	13.875	14.785	10.341	10.834
2	2	1	14 OBS	M	53.143	49.429	49.643	56.429
				SD	9.906	9.221	4.830	6.382
2	3	0	3 OBS	M	58.000	47.667	55.333	56.000
				SD	2.000	10.017	13.429	6.928
2	3	1	11 OBS	M	57.000	58.727	54.182	63.909
				SD	7.975	9.242	11.321	11.362

COMPLETE FACTORIAL WITH NO MISSING CELLS

T = Treatment

1 = experimental
2 = control

D = District

S = Sex
0 = Female
1 = Male

0800

APPENDIX B

ROLE DEFINITIONS

0081

ROLE DEFINITIONS

Instructional Design Team (IDT)

A. Train Instructional Technicians

1. Working with records of student progress
   a) Storing
   b) Using
   c) Keeping current

2. Operational techniques for
   a) Eliciting responses
   b) Facilitating conditions for task performance
   c) Using verbal communication processes which focus the student's attention on the task.

3. The SPURS program

4. Introducing students to learning vehicles:
   a) Ventures, so they can:
      1. identify the parts of a Venture
      2. select from among alternative learning activities
      3. identify additional learning activities not listed in the Venture,
      4. complete Ventures and demonstrate what they have learned.
      5. select from alternative Ventures.
   b) Decision making carrier projects, so they can:
      1. identify the parts of a Decision-Making Carrier Project,
      2. state the issue for which they want a decision,
      3. state what they want to protect or to gain for themselves and for others in the decision they make,
      4. investigate alternative proposals for making the decision and the possible consequences of those decisions, and
      5. make their decisions and justify that decision based on what they want to protect or gain.
   c) Decision executing carrier projects, as they can:
      1. identify the parts of a Decision-Execution Carrier Project,
      2. state the goal as a product.
      3. state the specifications of the product,
      4. state the steps for obtaining the product, and
      5. learn what is necessary in order to perform the steps adequately enough to meet the specifications.

d) Units, so they can:
   1. identify the parts of a Unit,
   2. use each part of the Unit for making effective decisions concerning their own behavioral competence, and
   3. complete Units and demonstrate what they have learned.

5. Design Ventures and CP's when appropriate ones are not available.

6. The training of students in designing Carrier Projects and in getting started on them.

7. The use of small group discussions, so students are able to:
   a) Share with each other what they have learned.
   b) Stimulate each other's interest in Venture topics, not yet studies, and
   c) Decide on the best way to demonstrate what they have learned.

B. Provide ITs with

1. Guidelines and steps for:
   a) Daily activity planning
   b) Modifying IDT prescriptions for individual students when the student is unable to perform the prescribed activities.
   c) Reporting student progress to parents
   d) Introducing students to:
      1. Ventures
      2. Decision-Making Projects
      3. Decision-Executing Projects
      4. Units
   e) Assisting students in designing own:
      1. Ventures
      2. Projects
   f) Periodic assessment and analysis of student attainment of anticipated achievement in reading and mathematics so that remediation can be prescribed when necessary.

2. Procedures for getting immediate on-sight help when needed during the absence of the IDT, or with telephone consultation when needed.

C. Make Physical Arrangements for:

1. Storing records of student progress

2. Storing media

3. Resource files such as a:
   a) "Reading pharmacy bank"

b) Games
c) Sponge Activities
d) etc.

4. Reports of student progress to parents

5. LIM materials organization and management in the library and/or classroom.

D. Effect Working Relations Between

1. ITs and school librarians.

E. Regularly Perform these Supervisory and Supportive Functions

1. Monitor the work for ITs in
   a) Detailed planning and schedules
   b) Behavior management performance
   c) Collection of media

2. Monitor the work of students in:
   a) Use of media
   b) Use of projects
   c) Periodic reviews of progress
      1. Reading
      2. Math
      3. Language Arts
      4. Spelling
      5. LIM
      6. PE
      7. Operant and interpersonal behaviors

3. Diagnose student progress and need, and prescribe for them in:
   a) Reading and language arts
   b) Mathematics
   c) LIM activities

4. Modify prescriptions as necessary based on IT's knowledge of students.

5. Assess and upgrade activities as appropriate with reference to:
   a) Student progress in:
      1. Math
      2. Reading
   b) Use of interest centers
   c) Use of Ventures
   d) Use of Projects

6. Relation of Interest Centers among cluster schools and rooms.

7. Demonstrate to ITs operational techniques for:
   a) Engaging students in tasks:

1. Ventures
2. Projects

b) Eliciting responses
c) Facilitating conditions for task performance
d) Using verbal communication processes, which focus the student's attention on the task.

8. Provide CDT with feedback concerning success and problems in LIM materials.

F. Provide trouble-shooting service as needed.

ROLE OF THE INSTRUCTIONAL DESIGN TEAM

EVALUATION, GUIDANCE AND HUMAN RELATIONS SPECIALISTS

A. Construct or identify instruments needed to provide student data reuired by the Instructional Design Team.

1. Construct or identify continuous progress record keeping systems, which professionals and paraprofessionals will use for monitoring the progress of individual students and can be used as non-graded reporting methods to parents and students.

2. Provide instructions and demonstrate for students and Instructional Technicians techniques for utilizing continuous progress record keeping systems.

3. Provide the Instructional Design Team with information about how each student is progressing in acquiring identified important skills and concepts.

4. Construct or identify data collection methods for determining the circumstances under which a student learns best.

5. Assess the value of the open-ended, exploratory student activities in producing want-servicing tasks.

B. Serve as a member of the Instructional Design Team as Guidance Specialist.

1. Assist Instructional Design Team members in analyzing student assessment data of all types (interest, aptitude) in order to identify or construct, and then prescribe, proper alternative learning tasks for individual students.

2. Visit assigned schools on a regular schedule, as well as on call, to work with children in order to evaluate the appropriateness of students' learning tasks and make needed adjustments in these tasks.

C. Serve as a member of the Instructional Design Team as Human Relations Specialist.

1. Help students plan carrier projects or circumstances, which the in-life wants and identify and acquire concept and skill learnings necessary to complete a project with particular emphasis on the human relation needs and wants of the students.

2. Monitor content of Single Increment Learning Units and carrier tasks for human relations content.

3. Monitor work of the Instructional Technician and provide help as needed in the area of human relations.

Qualifications:

1. Professional competence demonstrated by ability to speak intelligently about the educative process including:

   a) Familiarity with instructional programs and their rationale.

   b) Familiarity with dynamics of human behavior and its change processes and modern approach to behavioral education.

   c) Familiarity with child growth and development and learning theory at the elementary ages.

2. Possess known openness for new ideas.

3. Demonstrate innovative, creative ideas and the ability to put these ideas into practice.

4. Capable of working cooperatively in a professional team.

5. Willingness to accept a stipend of $12,000.00 for one year of training.

6. Commitment to remain with project until completion. (Employment beyond traing year dependent upon successful completions of training).

7. Has had some successful experience working with children at this age level.

8. Familiarity with human behavior, group dynamics and human assessment of evaluation procedures.

ROLE OF THE INSTRUCTIONAL DESIGN TEAM

CURRICULUM SPECIALIST

A. Specify to the Evaluation Specialist student data needed by the team for individualized diagnosis and prescription.

B. Design and provide instructional sequences for each individual student.

1. Interpret with members of the team student data in order to identify or construct, and then prescribe Single Increment Learning Units (SILU) and/or carrier projects that are appropriate for individualized students.

2. Help students plan carrier projects or circumstances, which serve their in-life wants and identify concepts and skills learnings necessary to complete a project.

3. Provide interest centers, which stimulate open-ended, exploratory student activities and to assess the value of these activities in producing want-serving tasks.

4. Visit assigned schools on a regular schedule, as well as on call, to work with children in order to evaluate the appropriateness of students' learning tasks and make needed adjustments in these tasks.

C. Assume the responsibility for the instruction of the students.

1. Demonstrate operational techniques (systems) to the Instructional Technicians for engaging the student in a task, eliciting responses, facilitating conditons for task performances and using verbal communication processes which focus the students' attention on the task.

2. Monitor work of the Instructional Technicians and provide help where needed.

3. Provide instruction to the students and Instructional Technicians on the management of the instructional systems (i.e. where to find materials and selecting alternatives).

4. Monitor student progress

a) Monitor the concept and skill attainment of students following the completion of each prescription.

b) Construct and identify continuous progress record keeping systems, which professionals and paraprofessionals will use for monitoring the progress of individual students and can be used as non-graded reporting methods to parents and students.

(This role is shared with the Instructional Coordinator and the Guidance and Human Relations Specialists).

c) Promote the use of Single Increment Learning Units and other materials so that students are assured of acquiring the systematic and comprehensive learnings known to be vital for life long learning.

D. Interpret the program to the staff and the community. Develop the best possible human relations.

Qualifications:

1. Professional competence demonstrated by ability to speak intelligently about the educative process including:

   a) Familiarity with instructional programs and their rationale.

   b) Familiarity with dynamics of human behavior and its change processes and modern approach to behavioral education.

   c) Familiarity with child growth and development and learning theory at the elementary ages.

2. Capable of professional leadership

3. Possess known openness for new ideas.

4. Demonstrate innovative, creative ideas and the ability to put these ideas into practice.

5. Successful elementary teaching experience.

6. Willingness to accept a stipend of $12,000.00 for one year of training.

7. Commitment to remain with project until completion. (Employment beyond training year dependent upon successful completion of training.

ROLE OF

INSTRUCTIONAL TECHNICIANS

A. The Instructional Technician is an advocate of the learner and thus serves as the learner's agent in dealing with the Instructional Design Team.

B. Engage Learners in prescribed tasks.

1. Conduct the activities prescribed by the Instructional Design Team.

2. Maintain appropriate classroom behavior

3. Maintain necessary physical environment

4. Motivate the students to engage in the prescribed behaviors and reinforce appropriate instances.

C. Engage learners in prescribed tasks and focus their attention on those tasks by:

a) Conducting the activities prescribed by the IDT

b) Using positive and negative reinforcement techniques to maximize student-task focus.

c) Maintaining appropriate classroom behaviors, and maintaining the necessary physical environment.

D. Assesses Learner Status:

1. Maintain appropriate records

2. Provide feedback to students where possible.

3. Provide feedback to the Instructional Design Team regarding results of their prescriptions.

4. Use all available data to understand each learner.

E. Help students identify and plan carrier tasks that arise out of the students' interests and inform the Instructional Design Team.

F. Provide feedback to the Instructional Design Team Leader regarding needs of technicians.

G. Establish appropriate relationships with people in the school and in the community.

Qualifications:

1. A reasonably bright individual who has the respect of the community and is flexible enough to adapt to new ideas.

2. Have a rapport with children as demonstrated by some successful experience working with children at this age level.

3. High level of energy and endurance

4. Stability of emotions (not subject to "moods").

5. Belief in ability of learner to change socially, emotionally and intellectually and belief in the contribution of daily teaching to promote that change.

6. Willingness to attent training sessions.

Sources of Personnel:

Local Community:

Den mothers, recreation leaders, 4-H Club leaders, Sunday School teachers, recent high school graduates, retired persons, etc.

ROLE OF
INSTRUCTIONAL COORDINATOR
(PRINCIPAL)

Roles:

A. Agent of the Community and Board of Education

1. Monitor activities of the project instructional team.
2. Provide facilities, equipment, materials and conditions.
3. Arrange and coordinate the utilization of community resources as specified by the Instructional Design Team.
4. Interpret regulations to Instructional Design Team.
5. Involve community in appropriate roles, assist the superintendents and keep them informed.
6. Interpret program to staff and community.
7. Make recommendations for employment of project instructional staff.
8. Articulate the project classrooms with the rest of the school program.

B. Serve as member of Instructional Design Team.

1. Monitor Instructional Technicians.
2. Provide feedback to Instructional Design Team on needs of Technicians, and the results of prescriptions.
3. Serve a coordinating role for school and Instructional Design Team.
4. Modify or provide local input for modification to localize Instructional Design Team decisions and products.
5. Participate in decisions concerning instructional programs for his school.

Qualifications:

1. Be employed as principal, head teacher, etc., in participating project school.

ROLE OF

SUPERINTENDENT

ROLE:

A. Serve as member of Cluster Advisory Board;

B. Interpret program to community;

C. Organize necessary administrative and logistical support.

Qualifications:

1. Be employed as Superintendent of participating school district.

2. Agree to participate in training activities, and to serve on Cluster Advisory Board

ROLE OF

TEACHER REPRESENTATIVE

ROLE:

A. Serve as member of Cluster Advisory Board;

B. Interpret program to colleagues and community.

Qualifications:

1. Must be a teacher in the participating school.

2. Agree to participate in training activities, and attend Cluster Advisory Board meetings.

APPENDIX C

TRAINING COMPONENT

0094

WESTERN STATES SMALL SCHOOLS PROJECT

SPURS

TRAINING COMPONENT

Daily Log of Activities

Compiled By:

Russell A. Williams

0095

Day one

9:00 - 12:00	General Assembly: Welcome to Training; layout of building, over-view of proposed training. Introduction to staff and students, brief overview of participants, projected role during training, brief overview of students at El.Lab School.
12:00 - 1:00	Lunch
1:30 - 2:30	Question and Answer Session Homework assignment 1. Write general description of self for tomorrow. 2. Read hand out on giving directions.

Day two

8:45 - 9:00	General Assembly Went over daily schedule
9:00 - 10:00	Observed Instructor teaching reading
10:00 - 11:00	Question and answer period: What did Instructor do? How did students react?
11:00 - 12:00	Observed Instructor teaching Math
12:00 - 1:00	Lunch
1:00 - 2:00	Lecture The Science of the Art of Giving Directions

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Day three

8:45 - 9:00	General Assembly Over-view of daily schedule
9:00 - 9:15	Observed Instructor for direction giving techniques
9:15 - 9:40	Discussion of direction giving techniques
9:45 - 10:50	Lecture The Usefulness of Reinforcement Theory in the Classroom.
10:50 - 11:30	Observed Instructor for reinforcement techniques
11:30 1:00	Lunch

Day three cont'd:

1:00 - 2:15	Discussion of reinforcement techniques
2:15 - 2:30	Separated into small groups to discuss examples of specific types of behavioral patterns.

Homework assignment
Write a descriptive paragraph of an individual child who is a behavioral problem. Include age, sex, social status, etc., of child.

Day four

8:45 - 9:00	General Assembly
9:00 - 10:10	Discussed examples of specific behavioral patterns
10:10 - 11:20	Separated into small groups to revise descriptive paragraph of behavioral problem.
11:20 - 12:10	Discussion of descriptive paragraph in whole group.
12:10 - 1:15	Lunch
1:15 - 2:00	Lecture Bloom's Taxonomy
2:00 - 2:30	Separated into small groups to write questions following Bloom's Taxonomy.

Day five

9:05 - 9:15	General Assembly
9:15 - 9:25	Lecture Individualization
9:25 - 9:35	Lecture Review of Bloom's Taxonomy
9:35 - 10:35	Separated into small groups to practice writing reinforcement programs for individual children.
10:35 - 10:45	Break
10:45 - 11:10	Wrote a reinforcement program for a child individually
11:10 - 12:00	Went over individual reinforcement programs

Day five cont'd:

12:00 - 1:00 Lunch

1:00 - 2:00 Worked in small groups on reinforcement programs for an individual child

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Day six

8:55 - 9:20 Observed Instructor teaching a new verbal signal, used to get student attention

9:20 - 9:40 Discussed the use of a verbal signal and how the children responded to it.

9:40 - 10:00 Lecture

(1) The learning task - what is to be taught.
(2) The student - what the child needs to do in order to show learning has taken place.
(3) The teacher - what must the teacher do.
(4) Motivation

10:00 - 10:15 Break

10:15 - 10:55 Lecture
Instructional objectives

10:55 - 11:00 Assignment #1
Think of your own classroom and write thru instructional objectives in a specific content area.

11:00 - 11:40 Discussed, identifying specific content of a program.

11:40 - 12:00 More work on assignment #1

12:00 - 1:10 Lunch

1:10 - 1:30 Discussed assignment #1

1:30 - 2:30 Film
Several short teaching episodes

2:30 - 6:00 WSSSP staff planning meeting
Itinerary for week of July 17, 1972

WSSSP TEAM MINUTES

I. Present Status of Participants

A. Need more practice in writing behavioral objectives.
B. Need to give directions to games, using reinforcement theory.
C. Use signal "Class" in working with groups.
D. Follow-up activities for taxonomy input.

II. Future Training

A. Observe instructor, read story and ask questions at various levels of taxonomy on Tuesday, July 18th at 9:00.
B. Read stories to 6 groups at 11:30 on Wesnesday and Friday.
   1. Work in groups to prepare story and questions only.
   2. Last Wednesday (August 2) 2 people take responsibility for group and prepare questions and follow-up activity with group for full period (11:10 - 11:50). Write activities in behavioral terms.
   *3. Did we decide whether participants had to write summary of story and follow-up activities to be shared with group???
D. During last wee, IT's will act in role similar to the one they will have at home. Teachers teach and they act as aides.

III. Students

A. Volunteer to teach game and read story.
B. Rewrite Behavioral Modification paper, tightening it up.
C. Write a behavioral objective and at least five components and design a lesson to teach to that objective.
D. Active participation in class sessions.

IV. Schedule for the Week

Tuesday:	9:00	Observe assembly for direction giving
	9:10 - 9:30	Observe instructor reading story and asking questions at levels of taxonomy
	9:30 - 10:00	Analyze story reading
	10:00 - 10:15	Break
	10:15 - 10:35	Anecdotal records
	10:40 - 11:10	Observe students on yard and keep anecdotal record
	11:10 - 12:00	Go over anecdotal records
	1:00 - 2:00	Select story from library and plan questions at various levels of taxonomy
Wednesday	9:00 - 10:20	Diagnosis
	10:20 - 10:40	Break
	10:40 - 11:30	Teach game and analyze

WSSSP TEAM MINUTES cont'd:

	11:30 - 12:00	Read stories to 6 groups
	1:00 - 2:00	Discussion about diagnosis of students during game. Small groups with observers to analyze story reading in terms of: 1. Direction giving and attention getting 2. Question on taxonomy 3. Reinforcement used 4. Diagnosis of students in group
Thursday	9:00 - 10:20	Components of learning task Telling time, discussion skills, behavior -- ready for lesson to begin
	10:20 - 10:40	Break
	10:40 - 11:10	Teach game (others keep anecdotol record of game)
	11:10 - 12:00	Analysis of game Diagnostic data about students supported by anecdotol record
	1:00 - 2:00	Plan for Friday's story
Friday	9:00 - 10:20	Diagnosing in Reading and Math
	10:20 - 10:40	Break
	10:40 - 11:30	Teach games and analyze
	11:30 - 12:00	Read story
	1:00 - 2:00	View film on telling time, Participants to observe for any of the following: 1. Objective 2. Components 3. Reinforcement theory 4. Diagnostic information on students

Day seven

8:50	- 9:00	General Assembly
9:10	- 9:25	Observed instructor reading story
9:25	- 9:35	Observed instructor giving follow-up questions to story - Bloom's Taxonomy
9:35	- 9:45	Break
9:45	- 10:25	Instructor analyzed story
10:25	- 10:45	Lecture - Writing anecdotol records
10:45	- 11:20	Observed students in play area and wrote an individual anecdotol record
11:20	- 12:00	Went over individual anecdoto; records with entire group
12:00	- 1:00	Lunch
1:00	- 1:30	Organized into small groups to plan a story and game format that each small group would teach to students at elementary lab school
1:30	- 2:30	Met in small groups to plan story and game

Day eight

9:10	- 10:15	Lecture Diagnosis
10:15	- 10:40	Break
10:40	- 11:20	Observed student teach a game
11:30	- 11:50	One member of small group read a story to 6 - 8 elementary students; others observed
11:50	- 1:00	Lunch
1:00	- 2:00	Analyzed teaching methods used by students, while teaching game
2:00	- 2:30	Each individual small group analyzed teaching methods used while reading stories

Day nine July 20, 1972

9:00	- 9:10	General Assembly
9:10	- 9:20	Lecture -Behavioral objective of a story

Day nine cont'd:

9:20 - 9:55	Lecture Components of learning
9:55 - 10:40	Analyzed task of teach time and looked for components of learning task
10:40 - 11:10	Observed student teaching a game
11:20 - 11:50	Analyzed teaching methods used by student while teaching game
11:50 - 1:00	Lunch
1:00 - 1:15	Lecture Story guidelines
1:15 - 2:30	Met in small groups and worked on teaching a game and reading a story to be presented at a later date.

Day ten

9:05 - 9:15	General Assembly
9:15 - 9:45	Met in small groups, given the assignment of looking at learning components of telling time and then writing behavioral objectives
9:45 - 10:20	Lecture The Necessity of Writing Behavioral Objectives
10:20 - 10:40	Break
10:45 - 11:00	Observed student teach a game
11:05 - 11:30	Analyzed teaching methods used during teaching of game
11:30 - 11:50	Observed stories being read in small groups of elementary students
11:50 - 1:00	Lunch
1:00 - 1:15	Talked about film and what to look for while watching film to be shown
1:15 - 1:35	Film of several short teaching episodes
1:35 - 2:15	Analyzed film and identified behavioral objective
2:15 - 2:30	Met in small groups to further work on story and game presentations

Day eleven

9:00	- 9:50	Lecture Diagnosis in reading
9:50	- 10:35	Met in small groups to work on appropriate diagnostic procedures in reading
10:40	- 11:10	Observed games being taught
11:10	- 12:00	Participant diagnosed child in reading
12:00	- 1:00	Lunch
1:00	- 2:30	Analyzed components of teaching a game Homework: Write-up your reading diagnosis
2:30	- 5:30	WSSSP staff plannning meeting Itinerary for week of July 24th - July 28th

Day twelve

9:00	- 9:15	General Assembly
9:15	- 10:00	Lecture Reading diagnosis
10:05	- 10:15	Observed instructor diagnosing childing in reading
10:15	- 10:30	Analyzed Enids diagnostic methods
10:45	- 11:15	Observed game being taught
11:15	- 11:30	Analyzed teaching methods used during teaching of game
11:30	- 12:00	Film, Teach More, Faster
12:00	- 1:00	Lunch
1:10	- 1:30	Question and answer period about reading diagnosis
1:30	- 2:30	Met in small groups for further planning of games and story

WSSSP TEAM MINUTES

Schedule

Tuesday	9:00 - 10:20				Input on Reading Observe instructor/teach small group
	10:20 - 10:40				Break
	10:40 - 11:10				Game
	11:10 - 11:30				Analysis of game
	11:30 - 11:50				Some groups need to diagose student in reading
Alternate Plan					
	*(11:10 - 2:30				Some diagnose - others view film part 1 of Teach More, Faster).
	1:00 - 2:30				Analyze game Paln for story for Wednesday
Wednesday	9:00 - 10:20				Input - Math diagnosis on basis of objectives and components
	10:20 - 10:40				Break
	10:40 - 11:10				Game
	11:10 - 11:30				Analyze game
	11:30 - 11:50				Read story
	1:00 - 2:30				Plan for Thursday
Thursday	9:00 - 12:00				Observe/work in team
		S	R		Two groups of participants to follow each group of students
	9:10 - 9:55	T	S		
	9:55 - 10:40	R	T		
	11:10 - 11:50				

Story Reading

Change to readint with own group during language, arts, time.

Game

Teach either in language or reading group, whichever seems more appropriate.

Need to divide groups of students into two for participants...

Need to number groups of participants...

Day thirteen

9:00 - 9:15	General Assembly
9:15 - 9:50	Lecture Math Diagnosis
9:50 - 10:20	Instructor and participants wrote behavioral objectives to use in next math class
10:20 - 10:45	Observed Dave teaching behavioral objectives
10:50 - 11:10	Observed game being taught
11:10 - 11:30	Break
11:30 - 11:50	Observed stories being taught
11:50 - 1:00	Lunch
1:00 - 1:25	Analyzed teaching methods used while teaching game
1:25 - 1:40	Analyzed teaching methods used and student reaction to methods during math
1:40 - 2:20	Organized participants into small group for teaching Math and Reading to El. Students

Day fourteen

9:00 - 11:50	Followed master schedule for July 27th - August 4th
11:50 - 1:00	Lunch
1:00 - 1:30	Review of reading diagnosis
1:30 - 2:30	Met in small groups to work on Math and Reading diagnosis

Day fifteen

8:40 - 9:00	Lecture How to use a teachers aide effectively
9:00 - 11:50	Followed master schedule
11:50 - 1:00	Lunch
1:00 - 2:30	Met in small groups for further planning of game and story

MASTER SCHEDULE FOR JULY 27 - AUGUST 4

WSSSP Participants Organization for the next two weeks:

Group T (ages 9-13)

Schedule:		
	9:00 - 9:55	Planning Time (Room 1226)
	9:55 - 10:40	Reading (Carpeted Room)
	11:10 - 11:50	Math (Assembly Room)

Group T(1)	Group T (2)
1. D	1. L
2. R	2. J
3. V	3. D
4. C	4. P
5. A	5. A
6. W	6. R

Group S (ages 7-10)

Schedule:		
	9:00 - 9:55	Reading (Carpeted Room)
	9:55 - 10:40	Math (Assembly Room)
	11:10 - 11:50	Planning (Room 1226)

Group S(1)	Group S (2)
1. E	1. B
2. J	2. L
3. B	3. A
4. B	4. S
5. C	5. C

Group B (ages 6-9)

Schedule:		
	9:00 - 9:55	Math (Assembly Room)
	9:55 - 10:40	Planning (Room (1226)
	11:10 - 11:50	Reading (Carpeted Room)

Group R(1)	Group R (2)
1. B	1. C
2. J	2. S
3. C	3. B
4. N	4. E
5. N	5. J
6. N	6. L

All groups will have a break from 10:40 - 11:10

Day sixteen

9:00	- 11:50	Followed master schedule
11:50	- 1:00	Lunch
1:00	- 1:15	General question and answer session
1:15	- 2:00	Lecture Motivations
2:00	- 2:30	Take specific example problem and explained how each was motivated
2:30	- 4:30	WSSSP staff planning meeting

Day seventeen

9:00	- 11:50	Followed master schedule
11:50	- 1:00	Lunch
1:00	- 1:15	General Assembly
1:15	- 1:55	Lecture Sponge Activities
1:55	- 2:30	Met in small groups for planning

Day eighteen

8:30	- 9:00	Film Teach More, Faster
9:00	- 9:55	Followed master schedule
9:55	- 10:15	Break
10:15	- 10:45	Lecture Independence
10:45	- 11:00	Lecture What happened at school last year
11:00	- 11:50	Followed master schedule
11:50	- 1:10	Lunch
1:10	- 2:30	Lecture First Day and Week of School

WSSSP STAFF PLANNING MEETING

WSSSP Minutes

Schedule:

Tuesday	9:00 - 11:50		Followed "Whole Group" general schedule
	1:00 - 2:00		Sponge Activities
	2:30 - 3:00		Teach More, ;aster (part 1) - Film
Wednesday	8:30 - 9:00		TMF Part 2 - Film
	9:55 - 11:00		Teaching for Independence
	1:00 - 2:00		First Week Activities
	2:30 -		Evaluation meeting
Thursday	8:30 - 9:00		TMF Part 3 - Film
	11:15 - 11:50		Program at UES
	1:00 - 1:45		Choice Time
	1:45 - 2:30		Self selection reading Use of aides - record keeping Reinforcement - problem children Classroom Org. - teaming Film - retention
Friday	8:15 -		Effective practice - Film
	9:00 - 9:55		Participants Teach
	9:55 - 11:00		Evaluation by participants (1) With names, state, IT - teacher rate self on objectives - use rating scale, get more copies of objectives on back of sheet answer question (2) Anonymous a. What parts of course were most helpful? b. What could have been eliminated? c. What should be included? Questions put on board and answered on looseleaf paper.
	11:00 - 11:50		Observe Party What behaviors are acceptable? How are refreshments, clean-up handled?

Day nineteen

8:30	-	9:00	Film - Motivation
9:00	-	10:55	Followed master schedule
10:55	-	11:15	Break
11:15	-	11:40	Observed programs put on by students for their parents
11:40	-	1:00	Lunch
1:10	-	2:30	Choice of several alternatives

Day twenty

8:15	-	9:00	Film - Effective Practice
9:00	-	9:55	Followed Master Schedule
10:00	-	11:00	Evaluation of training by participants
11:00	-	11:30	Observed techniques for giving a party for students
11:30	-		HOME

APPENDIX D

SAQ

0110

STUDENT ACTIVITIES QUESTIONNAIRE (SAQ)

The purpose of this questionnaire is to gather information about different kinds of student activities. There are no right or wrong answers, only questions where you can describe your activities. Do no try to give the best answer, only the one that describes you.

There are two sections. The directions are given before each section. Read the directions carefully and then go ahead. Use a pencil so that you can change your answers if your wish. Work quickly, do not spend too much time on any one question.

Before starting Section A, print your name in the boxes provided at the top of the answer sheet.

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Institute for Behavioral Research in Creativity

SECTION A

Listed below are a number of school activities. For each activity you are to mark A if you have done the activity this school year. Mark B if you have not done this activity, or cannot remember. If you do not understand the question, leave it bland. DO NOT make any marks on this booklet, only on the answer sheet. REMEMBER: A = yes, have done that activity in school. B = no, have not done that activity in school.

1. Set goals for yourself
2. Studied problems in your city
3. Thought up new ideas to do something better
4. Practiced making decisions
5. Taught someone else how to do something
6. Tried to guess or talked about the future
7. Told the good or bad things about some activity, building, etc.
8. Used your imagination when working on a task
9. Discussed current events in the classroom
10. Voted on what to do for a class activity
11. Worked with different studnets in group projects
12. Had a chance to be in charge of some activity
13. Told the class how you flet about something
14. Exhibited your work for other classes or schools

SECTION B

In this section are a number of questions that have choices for answers. The choices are listed A,B,C,D or E. Find the number of the questions on the answer sheet and then make a mark under the letter that matches your choice. For example, if your choice for question 15 is A, you would mark a line under the A beside the number 15 on the answer sheet. If you do not understand the question, make no marks for that number on the answer sheet and go on to the next question. Be sure to mark only ONE choice for each question. Work quickly. Don't spend too much time on any one question.

15. How often do you have class discussion where many students have something to say?
    A. Haven't done that, yet
    B. Not very often
    C. About once a week
    D. 2 or 3 times a week
    E. About once a day or more

16. How often do you have class activities where many students take turns speaking?
    A. More than once a day
    B. Once a day
    C. 2 or 3 times a week
    D. About once a week
    E. Not very often

17. How often do you have the opportunity to be the leader?
    A. Almost never
    B. Not very often
    C. Sometimes
    D. Frequently

18. In general, how are problems usually solved in your classroom?
    A. Our teacher solves the problems alone
    B. The teacher and students work together

19. How often do other students in your class tell you that you have done a good job?
    A. Not very often
    B. About once a week
    C. About 2 or 3 times a week
    D. One a day or more

20. How often do the students in your class talk to the teacher about how much time they should spend on an activity?
    A. More than once a day
    B. About once a day
    C. 2 or 3 times a week
    D. Once a week
    E. Not very often

21. Do you ever want to continue to do your work during recess or lunch?
    A. No, never
    B. Almost never
    C. About once a week, or less
    D. Sometimes during the week
    E. Almost every day

22. Do you ever work on something that other students in your class are not working on?
    A. No, usually we work on the same thing
    B. Sometimes, about once a week or less
    C. Fairly often, 2 or 3 times a week

23. How often do you work on something at home just so you can learn more about it?
    A. About once or so a month
    B. About once or twice a week
    C. Almost Everyday

24. Does your class have discussions about how the students should act?
    A. Yes B. Not very often
    C. No, generally the teacher tells us

25. How often does your teach encourage you to try a difficult task?
   A. Almost never
   B. Sometimes once a week or less
   C. Fairly often, 2 or 3 times a week

26. How often are you excited about going to school in the morning?
   A. Almost never
   B. Once in a while during the school year
   C. About once a week
   D. Almost every day

27. How often do you talk to a teacher by yourself about your school work?
   A. 2 or 3 times a day
   B. About once a day
   C. About once a week
   D. Almost

28. How often do you practice doing something just because you want to do it better?
   A. Once a day or more
   B. A few times per week
   C. About once a week
   D. Not very often

29. How often do you try to do better after your teachers make suggestions on your school work?
   A. Almost never
   B. Not very often
   C. Fairly often
   D. Almost always

30. How often does your teacher encourage you to stick with a difficult problem?
   A. Almost never
   B. Sometimes, one a week or less
   C. Fairly often, 2 or 3 times a week
   D. About once a day or more

31. Do you think your teacher knows what kinds of activities you like the most?
   A. Not very well
   B. I don't know
   C. Yes

32. Does your class have acitivities where many students get called on?
   A. No, haven't done that yet
   B. Not very often
   C. About once a week
   D. Yes, 2 or 3 times a week
   E. Yes, about once a day or more

33. How often do you complete the activities you have planned?
   A. A number of times a day
   B. About once a day
   C. Fairly often
   D. Almost always

34. How often does your teacher permit a lot of talking and activities in your classroom?
   A. A number of times a day
   B. About once a day
   C. The classroom is usually rather quiet

35. Does your teacher sometimes have you make up your own plan for how you are going to spend the next hour or school day?
   A. Haven't done that yet
   B. Not very often, but sometimes
   C. About once a week
   D. 2 or 3 times a week
   E. About once a day

36. In the classroom the teacher usually calls on:
   A. The same group of students
   B. Almost all the students

37. How often do you read a book, newspaper, or magazine at home just because you want to?
   A. About once or twice a month or less
   B. About once a week
   C. A few times during a week
   D. Almost every day

38. How many books, if any do you usually take home from your school library and read each week?
   A. None
   B. 1
   C. 2 or 3
   D. 4 or more

39. Do you have activities where the teacher has you tell someone else, about something?
   A. No, haven't done that yet
   B. Not very often
   C. About once a week
   D. Yes, 2 or 3 times a week or more

40. How often can you speak out in a classroom discussion when you want to?
   A. Almost never
   B. Not very often
   C. Sometimes
   D. Fairly often
   E. Always

41. How often does your teacher tell you about something you have done well?
   A. Almost never
   B. Sometimes, once a week or less
   C. Fairly often, 2 or 3 times a week
   D. About once a day
   E. 2 or 3 times a day

42. How often does your teacher let students decide how an activity or project should be done?
   A. Almost never
   B. Sometimes
   C. Most of the time

43. Has your class spent time comparing things or ideas and deciding what should be done?
   A. No, haven't done that yet
   B. A little time
   C. Yes, a great deal of time

44. How often do you spend <u>less</u> time on some activities than other students do?
   A. Fairly orten, 2 or 3 times a week
   B. Sometimes, about once a week or less
   C. Almost never

45. How often do you spend <u>more</u> time on some activities than other students do?
   A. Fairly often, 2 or 3 times a week
   B. Sometimes, about once a week or less
   C. Almost never

46. How much do you like what you do at school?
   A. I don't like it
   B. I like it a little
   C. I like it
   D. I really like it

47. How often do you tell your parents about something good that happened in school?
   A. Very seldom
   B. Sometimes about once or twice a week
   C. Almost everyday

48. Have any of your hobbies or activities at home led to class discussions?
   A. Yes
   B. No

49. How often do you get excited about what is happening in class?
   A. Almost never
   B. Not very often, less than once a week
   C. Sometimes, about once or twice a week
   D. Almost every day

50. Have you ever wanted to stay after school to finish up something if you could?
   A. Yes, once a week or more
   B. Sometimes
   C. No, almost never

51. Do you have class activities where you practice planning a trip, a building, or something else?
    A. No, haven't done that yet
    B. Not very often
    C. About once a week
    D. Yes, more than once a week

52. Has your class spent time talking about what might happen in the future?
    A. No, haven't done that yet
    B. A little time
    C. Yes, a great deal of time

53. Who decides what the class will do?
    A. The teacher usually decides by herself what the class will do.
    B. We often plan with the teacher what we will do

54. Do your class and teacher sometimes plan together how they are going to spend their time for the next week?
    A. Haven't done that yet
    B. Not very often
    C. About once every few weeks
    D. Almost every week

55. Does your teacher know what is easy and what is hard for you?
    A. No, not very well
    B. Sometimes
    C. Yes, knows very well

56. How do you usually feel when your teacher talks to you about your school work?
    A. Encouraged
    B. Don't know
    C. A little discouraged

57. Does your teacher have you decide how well you have completed some activity or plan?
    A. Haven't done that yet
    B. Not very often
    C. About once a week
    D. Yes, we've done that a lot

58. Are you proud of the things you do in school?
    A. Very proud
    B. Proud of some things, not of others
    C. Not very proud

59. Do you have class activities where everyone tries to think up new ideas?
    A. No, haven't done that yet
    B. Not very often
    C. About once a week
    D. Yes, more than once a week

60. Have any school activities started you working on any new hobbies at home?
    A. Yes
    B. No

APPENDIX E

PARENT EVALUATION QUESTIONNAIRE

0117

PARENTS EVALUATION QUESTIONNAIRE

TO: Elementary School Parents

FROM: Utah State Board of Education and Your District

Please circle the grade your child is in: 1 2 3 4 5 6

As we conclude another school year, we need your help in assessing our progress and planning for next year. Please complete this questionnaire concerning your child's educational program this past year. In order to insure your candid, honest, and thoughtful response to this questionnaire, you need not sign your name. No attempt will be made to look at individual responses since we are interested only in the composite opinion of our parents. We will appreciate your completion of the form and dropping it in the mail within three (3) days.

Please circle the letter which indicates the extent to which you agree or disagree with each of the following statements:

	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
1. My child likes achool.	A	B	C	D	E
2. My child receives individual attention from the teachers and other staff members in his class.	A	B	C	D	E
3. The number of children enrolled in my child's class is adequate.	A	B	C	D	E
3a. (Circle an appropriate response) My child should have (more, the same, less) students in his class.	more		the same		less
4. My child has a good relationship with an adult at school.	A	B	C	D	E
5. The Staff has tried to answer the questions I have about the school program.	A	B	C	D	E
6. The use of parent volunteers strengthens the school program.	A	B	C	D	E
7. Children should have some choices in the work they are to do.	A	B	C	D	E
8. The use of teacher aides and interns strengthens the educational program.	A	B	C	D	E
9. The classroom discipline for my child at school is satisfactory.	A	B	C	D	E
10. School is helping my child develop good work and study habits.	A	B	C	D	E
11. The overall program at school is helping my child to get along better with others.	A	B	C	D	E
12. Communication to the home is adequate.	A	B	C	D	E

	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
13. I feel the student activities at this school are satisfactory.	A	B	C	D	E
14. I would like to be involved in school events more than I am now.	A	B	C	D	E
15. I feel welcome when I visit school.	A	B	C	D	E
16. I think students when not in class are adequately supervised.	A	B	C	D	E
17. I understand and support the goals and objectives established in school for my child.	A	B	C	D	E
18. I think the method of reporting my child's academic progress in school is adequate.	A	B	C	D	E
19. School is helping my child develop positive feelings about himself and his abilities.	A	B	C	D	E
20. The range of subjects my child has in school is adequate.	A	B	C	D	E
20a. (Circle an appropriate response) I would like (more, the same, less) choice of subjects for my child.	more		the same		less
21. My child is learning at a satisfactory rate in his various subjects.	A	B	C	D	E

Name (Optional)

APPENDIX F

IDEA/ETS ATTITUDE QUESTIONNAIRES

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APPENDIX G

A SELECTED LIST OF DIFFERENTIATED STAFFING SCHOOLS

0123

1. Oak Avenue Intermediate School. Temple City, California.
2. Cherry Creek School District. Denver, Colorado.
3. Kansas City School District. Kansas City, Missouri.
4. Mesa Public Schools. Mesa, Arizona.
5. Scottsdale Public Schools. Phoenix, Arizona
6. Cerritos Elementary School. ABC Unified School District, Artesia, California.
7. Marin County Schools. Corte Madera, California.
8. Fallbrook Union High School District. Fallbrook, California
9. Fountain Valley School District. Fountain Valley, California.
10. Temple City Unified School District. Temple City, California
11. Cherry Creek Schools. Englewood, Colorado
12. Greenwich Public Schools. Greenwich, Connecticut.
13. Florida State Department of Education. Tallahassee, Florida.
14. Duval County School District. Jacksonville, Florida.
15. Downers Grove Public Schools. Downers Grove, Illinois.
16. Montgomery County Public Schools. Rockville, Maryland.
17. Amherst-Pelham Regional Schools. Chestnut Street. Amherst, Mass.
18. Weston Public Schools. Weston, Massachuesettes.
19. Jackson Public Schools. Jackson, Michigan.
20. Wilson Campus School. Mankato, Minnesota
21. Independent School District 281. Minneapolis, Minnesota
22. Independent School District No. 197. St. Paul, Minnesota.
23. Kansas City School District. Kansas City, Missouri.
24. Clark County School District. Las Vegas, Nevada.
25. East Syracuse-Minoa Central Schools. East Syracuse, New York.
26. Williamsville, Central School District. Williamsville, New York

27. Princeton City School District. Cincinnati, Ohio.

28. Dayton City School District. Dayton, Ohio.

29. Delaware City District. Delaware , Ohio.

30. Beaverton School District No. 48. Beaverton, Oregon.

31. Hood River County Schools. Hood River, Oregon.

32. John Adams High School. Portland, Oregon.

33. Menasha Public Schools. Menasha, Wisconsin.

34. Wisconsin Research and Development Center for Cognitive Learning. Madison, Wisconsin.